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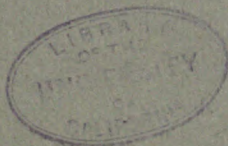


DATA REFERRING
- TO -
MEXICAN MINING

PREPARED
IN VIEW OF THE PARTICIPATION
OF MEXICO IN THE UNIVERSAL EXPOSITION OF PARIS
IN 1900

BY THE INSPECTING ENGINEER OF MINES

CARLOS SELLERIER



MEXICO.

F. P. HOECK AND COMPANY, PRINTERS
First San Francisco No. 12

1901

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NOTICE.

As Chief of the Eleventh Group (Mines and Metallurgy) of the Committee in Mexico for the Universal Exposition of Paris in 1900, I believe it proper and convenient to present in a concise manner, so as to be easily consulted, the most interesting facts which in my judgment can give a clear idea of the present state of Mexican Mining and of the remarkable advance and progress it has realized during the period of time between the last International Exposition of Paris held in 1889 and the one of 1900.

On publishing these brief and incomplete notes, whose defficiency is apparent, I only pretend to furnish foreign mining men and capitalists with the means of forming a rapid and simple idea sufficiently exact, as to the RAISON D'ETRE of our principal national industry, and if possible, encourage them even in this indirect way, to start enterprises in the country, which without doubt will be amply remunerated if they are established, worked and administdred by intelligent and honest persons.

Mexlco, November 1899.

CARLOS SELLERIER.

HISTORY



HISTORY.

The Aztecs knew how to work the placers and superficial beds of gold and silver, they treated these ores by washing them or by simple roasting, and sometimes employed fire in working their mines.

The Spaniards for the first time in this country, undertook formal works for exploiting mines in Taxco (Guerrero). Later on they worked in Pachuca (Hidalgo), Sultepec (Mexico), Tlalpujahua (Michoacan), Zacatecas and Guanajuato.

The Mexican proceeding for "patio" treatment, to whose application we must attribute about 80 % of the total amount of silver produced so far in Mexico, was invented by Bartolomé de Medina, in 1557.

To the recent establishment of large smelters on a modern scale, for lead or copper (auriferous or argentiferous), we must attribute the remarkable increase of mining industry in Mexico, which, on the other hand, would have been unable to be carried out without the immense railroad net crossing the country and without the decided protection which the Government has ever imparted to this noble branch of our national industry.

MINING PRODUCTION



MINING PRODUCTION.

As there is such a scarcity of statistical data amongst us, referring to the production of Mexican mines, it appears to me convenient to set them forth, even if only in an estimative form, and not to adopt as true, those which we know are inexact, deriving from the same, a series of consequences which will be less true than those we may infer from estimative data.

ESTIMATED GOLD PRODUCTION IN MEXICO

From the 1st. of July 1889 to the 30th. of June 1899.

FISCAL YEARS	GOLD Kgs.
1889 to 1890	1,556
1890 to 1891	2,045
1891 to 1892	2,387
1892 to 1893	2,821
1893 to 1894	2,764
1894 to 1895	8,429
1895 to 1896	10,811
1896 to 1897	12,190
1897 to 1898	13,475
1898 to 1899	16,607
TOTALS . .	73,085

NOTE.—Besides the fiscal data referring to coinage and exportation of gold, account has been taken of the amounts of this metal which it is supposed have been fraudulently extracted from the country, and those which it is estimated have been employed in national industries.

The legal value of a Kilogram of gold is \$ 675,416.

ESTIMATED PRODUCTION OF SILVER IN MEXICO

From the 1st. of July 1889 to the 30th. of June 1899.

FISCAL YEARS	SILVER Kgs.
1889 to 1890	979,317
1890 to 1891	1,045,707
1891 to 1892	1,161,780
1892 to 1893	1,326,683
1893 to 1894	1,374,512
1894 to 1895	1,431,805
1895 to 1896	1,500,097
1896 to 1897	1,565,585
1897 to 1898	1,723,171
1898 to 1899	1,780,463
TOTALS . .	13,889,120

NOTE.—Besides the fiscal data referring to coinage and exportation of silver, account has been taken of the small amounts of this metal which it is supposed have been fraudulently extracted from the country and the important ones which it is estimated have been employed in national industries.

The legal value of a Kilogram of pure silver is \$ 40,915.

ESTIMATED COPPER PRODUCTION IN MEXICO

From the 1st. of July 1889 to the 30th. of June 1899.

FISCAL YEARS	COPPER Metric Tons
1889 to 1890	4,300
1890 to 1891	5,000
1891 to 1892	6,300
1892 to 1893	9,100
1893 to 1894	11,200
1894 to 1895	11,900
1895 to 1896	11,600
1896 to 1897	12,100
1897 to 1898	13,700
1898 to 1899	16,000
TOTALS . .	101,200

NOTE.—The Boleo French Company (Sta. Rosalia, Lower California) is and has been the one to produce the most copper in Mexico. During the fiscal year from 1897 to 1898 it produced 10,000 tons of metallic copper, and from 1886 to the 30th. of June 1898, 66,500 tons.

ESTIMATED PRODUCTION OF LEAD IN MEXICO

From the 1st. of July 1889 to the 30th. of June 1899.

FISCAL YEARS	LEAD Metric Tons
1889 to 1890	21,800
1890 to 1891	21,000
1891 to 1892	31,700
1892 to 1893	51,800
1893 to 1894	60,500
1894 to 1895	62,500
1895 to 1896	65,500
1896 to 1897	67,300
1897 to 1898	71,500
1898 to 1899	81,000
TOTALS . .	534,600

NOTE.—The Peñoles Mining Company (Mapimi - Durango) produced 16,000 tons of Metallic Lead in 1899, and is at present the one who produces the most Lead in Mexico.

ESTIMATED MINING PRODUCTION IN MEXICO

METALLIC ORES			
ORES	1893 to 1894	1898 to 1899	Differences
Gold	1,816,000	24,680,000	+ 22,864,000
Silver	30,182,000	72,848,000	+ 42,666,000
Copper	40,000	9,600,000	+ 9,560,000
Lead	189,000	12,000,000	+ 11,811,000
Antimony . . . . .	. . . . .	102,000	+ 102,000
Zinc . . . . .	. . . . .	1,000	+ 1,000
Other products such as Iron, Quick-Silver, etc.	1,000,000	4,000,000	+ 3,000,000
TOTALS . .	33,227,000	123,231,000	+ 90,004,000
NON-METALLIC MINERALS			
Coal	2,000	3,700,000	+ 3,798,000
Plumbago . . . . .	. . . . .	19,000	+ 19,000
Other products such as Marbles, Construction ma- terial, Salts, etc. . . .	10,000,000	22,000,000	+ 12,000,000
TOTALS . .	10,002,000	25,719,000	+ 15,717,000
MINING PRODUCTION IN MEXICO			
Metallic products	33,227,000	123,231,000	+ 90,004,000
Non-Metallic products . .	10,002,000	25,719,000	+ 15,717,000
TOTALS . .	43,229,000	148,950,000	+ 105,721,000

NOTE —All values are in Mexican Dollars.

IMPORTATION OF MINERAL MATTER

IMPORTATION

of Ores, Metallic Manufactures, Products and Mineral Fuel, and Explosives.

SUBSTANCES	1892 to 1893	1893 to 1894	1894 to 1895	1895 to 1896	1896 to 1897	1897 to 1898	1898 to 1899
Amianthus in fibre or powder	124	2,362	1,451	2,600	2,124	5,331	3,957
Sulphur	18,996	8,878	12,037	6,734	15,864	11,368	15,342
Impure Mineral Oil	370,670	242,027	250,292	413,725	315,597	361,592	421,677
Purified Mineral Oil	96,334	66,724	62,200	86,642	74,848	62,259	42,457
Pit-Coal Tar	3,431	3,424	2,833	3,896	4,379	4,482	7,488
Asphalt	15,875	15,716	1,417	11,376	10,747	7,418	1,066
Quicksilver	603,525	506,643	541,664	574,143	469,907	514,013	446,230
Copper, its alloys and manu- factures	529,175	462,982	625,586	731,781	653,515	818,600	1,035,039
Coke	315,327	378,522	287,075	492,167	439,593	512,392	688,344
Tin, Lead and Zinc and their manufactures	73,270	76,525	108,629	133,425	133,518	135,068	205,577
Iron and Steel and their manu- factures	3,071,824	2,496,183	2,713,681	4,190,272	4,440,092	5,170,437	5,676,329
Gold, Silver and Platinum . .	359,813	281,024	1,036,322	232,604	233,122	1,134,971	238,654
Plumbago	1,966	1,698	2,697	6,156	5,060	2,705	5,277
Pit-Coal	1,356,686	626,070	701,913	496,376	881,557	924,423	1,340,264
Dynamite and explosives not specified	497,358	250,932	372,741	413,924	413,472	453,563	657,523
Mining Powder	79,082	79,123	65,769	105,569	125,172	98,352	96,353
Fuse for mining	77,993	45,619	81,639	77,437	105,893	84,625	104,011
Talc	12,457	4,639	1,849	2,535	2,086	2,558	1,943
Other metals such as Alumin- ium and Antimony	604,509	518,774	544,945	578,623	474,011	528,765	452,181
TOTALS . . .	8,088,415	6,067,865	7,414,740	8,559,985	8,800,557	10,832,922	11,439,712

NOTES.—All values are in Mexican silver dollars.

The data referring to the fiscal years from 1889 to 1890, 1890 to 1891, and from 1891 to 1892, are wanting, because the different nomenclature of objects that was then followed, does not correspond with the present one.

IMPORTATION

of Metals, Metallic Manufactures, Products and Mineral Fuel, and Explosives.

FISCAL YEARS	Values in Mexican silver dollars
1892 to 1893	8,088,415
1893 to 1894	6,067,865
1894 to 1895	7,414,740
1895 to 1896	8,559,985
1896 to 1897	8,800,557
1897 to 1898	10,832,922
1898 to 1899	11,439,712
TOTALS . .	

NOTE.—Amianthus; sulphur; mineral oils; quick-silver; copper, its alloys and manufactures; coke; tin; lead; zinc, and its manufactures; iron and steel and their manufactures; gold, silver and platinum; plumbago; pit-coal; explosives; fuse and caps; talc and other metal such as aluminium, antimony, etc.

The data referring to the fiscal years from 1889 to 1890, 1890 to 1891, and 1891 to 1892, are wanting, because the different nomenclature of objects that was then followed does not correspond with the present one.

EXPORTATION OF MINERALS

EXPORTATION OF METALS, ORES, AND METALLURGICAL PRODUCTS

From the 1st. of July 1889 to the 30th. of June 1899

METALS	1889 to 1890	1890 to 1891	1891 to 1892	1892 to 1893	1893 to 1894	1894 to 1895	1895 to 1896	1896 to 1897	1897 to 1898	1898 to 1899
Antimony (Mineral)		3,378			1,420	7,291	24,240	50,916	65,873	101,318
Quicksilver			176		600	940	3,780	3,157		
Copper	737,041	941,770	1,186,560	2,279,473	2,419,393	2,712,385	3,921,095	3,922,300	4,771,631	5,601,134
Tin		140	11,600	1,420	13,231	16,879	6,032	2,305		
Iron			2,945			2,574	778			208
Gold ⁽¹⁾ (Mineral, bullion and metallurgical products)	457,610	612,619	782,697	908,235	690,643	4,199,305	5,519,252	6,407,652	7,124,963	8,630,659
Mexican Gold ⁽¹⁾ coined	96,592	134,219	175,524	113,964	135,999	164,113	169,794	93,632	116,428	212,422
Silver ⁽²⁾ (Mineral, bullion and metallurgical products)	14,828,362	17,636,962	19,794,016	20,670,837	17,722,884	30,575,104	38,368,884	44,393,103	48,722,549	52,314,606
Mexican Silver ⁽²⁾ , coined	23,084,489	17,622,171	26,478,376	27,160,875	17,386,338	17,077,119	20,377,663	14,578,958	18,214,989	14,116,935
Lead	607,330	1,125,469	3,822,359	7,748,787	9,927,424	1,827,818	2,555,544	2,814,192	2,909,705	3,786,144
Zinc (Mineral)			14,041	8,000	106			20,388	22,323	840
TOTALS	39,811,424	38,076,728	52,268,294	58,891,591	48,298,038	56,583,528	70,947,062	72,286,603	81,948,461	84,764,266

NOTES.—All values are in Mexican Silver.

(1) Gold dollars, the legal value of a kilogram of this Metal, being \$675 ⁴¹⁶/₁₀₀.

(2) Silver dollars, the legal value of a kilogram of this Metal being \$40 ⁹¹⁵/₁₀₀.

Exportation of metals, ores, and metallurgical products		
FISCAL YEARS	Values in Mexican Silver dollars	Values in Mexican Silver dollars
1889 to 1890	39,811,424	56,583,528
1890 to 1891	38,076,728	70,947,062
1891 to 1892	52,268,294	72,286,603
1892 to 1893	58,891,591	81,948,461
1893 to 1894	48,298,038	84,764,266

NOTE.—Antimony, quick-silver; copper; tin; iron; mineral, bullion, and metallurgical products of gold; mexican gold coined; mineral, bullion, and metallurgical products of silver coined, zinc.

EXPORTATION OF NON-METALLIC MINERAL SUBSTANCES

From the 1st. of July 1889 to the 30th. of June 1899

MINERAL SUBSTANCES	1889 to 1890	1890 to 1891	1891 to 1892	1892 to 1893	1893 to 1894	1894 to 1895	1895 to 1896	1896 to 1897	1897 to 1898	1898 to 1899
Asphalt	3,747	2,972	4,474	2,497	10,759	3,751	10,140	10,738	12,470	1,382
Sulphur									3,000	
Coal				33,960	205,605	232,919	270,176	399,474	438,261	507,902
Emery	2,005	8,415	17,080	500						
Manganese (Mineral)										
Marble.	162,134	87,556	169,654	351,148	108,512	167,136	263,023	214,638	9,066	
Construction Materials			456	1,158	1,573	3,778	23,612	32,871	85,764	18,397
Opals.	2,300								3,758	
Pumice Stone				4,150						
Plumbago.	2,060	1,125	3,320	5,100	5,571	7,570	8,771	8,750	1,300	10
Salt	5,645	2,765	15,036	9,672	6,320	17,581	2,738	5,749	8,663	18,237
Talc		472	700						16,691	8,605
Chalk	6,842	4,629	7,992	14,514	20,414	3,270	8,750	7,275	11,250	2,250
TOTALS	184,733	107,934	218,712	422,699	358,754	436,005	587,210	679,495	590,223	556,783

NOTE.—All values are in Mexican Silver.

Exportation of non-metallic mineral Substances				
FISCAL YEARS		Values in Mexican Silver dollars	FISCAL YEARS	Values in Mexican Silver dollars
1889 to 1890		184,733	1894 to 1895	436,005
1890 to 1891		107,934	1895 to 1896	587,210
1891 to 1892		218,712	1896 to 1897	679,495
1892 to 1893		422,699	1897 to 1898	590,223
1893 to 1894		358,754	1898 to 1899	556,783

NOTE.—Asphalt, sulphur, coal, emery, manganese, marble, construction materials, opals, pumice-stone, plumbago, salt, talc, chalk.



MINING LEGISLATION

MINING LEGISLATION.

Mining legislation in Mexico has been undergoing a logical and radical evolution ever since 1884 up to the present date.

As can be seen by the laws enacted from 1887 to 1894, the Mexican Government since that time, had in view as a principal end, that of combating the disastrous effects which the fall in silver would undoubtedly have occasioned, had it not been for the timely enactment of said laws.

COLONIAL PERIOD - 1521 TO 1821.

RULINGS OF THE "ANTIGUO CUADERNO".

The so-called "Antiguo Cuaderno" (ancient book), in the primitive mining legislation of New-Spain, consisted of several isolated rulings, given by different Sovereigns of that time, and of which we herewith mention the most important.

In 1525, the Emperor Charles V, dictated the first rules, establishing authorities who were to undertake the management of the mining branch.

In 1526, Charles II, decreed several rules relative to the discovery of mines and arrangement of fiscal taxes.

From 1551 to 1571, the same Monarch, dictated several rules which were later on confirmed by Philip II; one of the most remarkable, is that one referring to the establishment of equality of rights between the natives and the Spaniards.

RULING OF THE "NUEVO CUADERNO" (NEW BOOK).

Under this title are comprised the rulings given by Philip II in 1584 and founded on common German law: these are the ones which were so ably commented upon by Francisco Xavier Gamboa.

The ruling issued by the same King in 1572 and 1590, refer to the privileges granted to miners and smelters, so that the mines and reduction works could be kept in constant operation. These rules, were confirmed by Philip III, in 1619 and 1620.

MINING RULES ISSUED BY CHARLES III. - IN 1783.

This law declared as property of the Crown, all those mines discovered and to be discovered in the country that had been conquered, and only the Sovereign could grant concessions to his subjects so that they could work them.

The Monarch would limit the number of "pertenencias" (mining claims), as might be the case in treating of a Company organized for working them, or of some subject who aspired towards the same end; and he also could change said number if new minerals were to be worked, if it was a question of restoring old workings or those already known.

The Ruling decreed the working of mines and if same was not done with a certain number of workmen or was suspended for a certain length of time, a third party could denounce the mines thus badly worked and acquire on them the rights lost by the former worker.

The duties and fiscal dues that the Sovereigns of that time levied on mining the industry were excessive; and only the enormous amounts of precious metals contained in the almost virgin ores of New Spain, could have rendered the working of its mines productive for the conquerors who dedicated themselves to this branch.

INDEPENDENCE - 1821.

During the eleven years of the war of Independence, it can be affirmed that the mining industry was partially paralyzed through the whole country.

After the consummation of national autonomy, it was declared that the property of all the minerals, belonged to the Nation; the ancient rulings subsisted with all their inconveniences; the taxes were increased and the working of mines was carried on on a smaller scale than in the Colonial period.

FEDERAL REPUBLIC - 1857.

In this year (1857), the definite political Constitution of the country was formed and promulgated, and according to it, each State could legislate on mining, freely and independently from the others.

Some States accepted and followed the ancient Rulings of Charles III; others, authorized as before said, through their legislatures, issued special rulings, which in general only tended towards modifying the above mentioned rulings.

But as at that time, every legislature could levy taxes on the mining industry, and as each legislature also dictated its ruling in accordance with their various views, the number of taxes became unlimited and great confusion arose from the large number of legislative rules, causing serious damage to mining.

This abnormal legislative condition of mining industry, due to the fact that the rulings of a State were frequently inapplicable in others, produced great discouragement among the natives and foreigners, and consequently the working of mines fell off very much.

MINING CODE - 1884.

A few years prior to 1884, the country began to experience trouble through the fall of silver, and on the 15th of December 1883, the Congress of the Union, authorized the Executive to issue a Mining Code.

The Department of Fomento appointed a special Committee formed by mining engineers and lawyers, and invited all the States to take part in the formation of the Code.

This Code was issued in 1884; it became obligatory throughout all the Republic, unifying mining legislation, suppressing that of the States and preventing them from legislating on the subject, and although the principles which were taken into account at its formation were those of the famous former rulings, still it gave greater freedom to the working of mines.

Some objects and necessary materials for working same were exempted from taxes and import dues; on others these were reduced to a minimum. A maximum tax was fixed for the States which could not be increased; denouncements still subsisted but the Federal Government was authorized to grant special protection, and finally, other stipulations were given regarding the encouragement of mining exploitation.

LAW OF THE 6th. OF JUNE 1887.

At this time the mining industry felt the fatal influence above mentioned, and the Executive again initiated the issue of laws to counteract same.

The law of the 6th. of June 1887 was then enacted, by which, an exemption of all taxes was declared on the mines of iron, quick-silver and coal; several articles and materials employed in mining were exempt from the payment of import duties and the Executive was authorized to execute special contracts.

This authorization consisted in granting franchises for a term of ten years, to those Companies who invested at least two hundred thousand dollars, during five years, in mining enterprises as well as metallurgical ones, granting as many as thirty *pertenencias* or claims.

The result of this law, was the execution of more than three hundred contracts between the Executive and several Companies and individuals.

LAW OF THE 6th. OF JUNE 1892.

The monetary crisis having reached an alarming degree, the Government being justly troubled, thought it convenient to dictate, as it did, proper rules in order to avoid as far as possible, the effects of such an economical condition.

In order to avoid the serious evils caused by such a situation to the Treasury, the mining industry and to the country in general; the Government rightly supposed that the only remedy was to give out liberal laws, such as would facilitate the working of mines, increasing and cheapening the production of silver mines.

This law was then issued, which is still in force, and which has been one of the many evidences not only of talent and ability of the actual Government, but also of its constant care for daily improvement in the in the economical situation of the country, its efforts being to lead it to the road of prosperity and financial and industrial well-being.

This law, based on principles that were entirely modern and liberal, gave to the miner the personal property of his mines, which property was secure, irrevocable and perpetual, through the payment of an annual tax; it conceded the right to work and acquire said property and preserve same.

The law we are treating of abolished denouncements and established moderate taxes for the acquisition and preservation of said property.

For minerals not gold, silver or platinum, the annual tax was of \$ 2.50 per *pertenencia* or hectare; and for those of gold, silver and platinum it was of \$ 10.

If the amount of silver does not reach 250 grammes per metric ton, or if the gold does not reach 10 grammes, the tax is \$ 5 per hectare, if more than fifty and less than one hundred *pertenencias* are owned, and of \$ 2.50 if more than one hundred are owned.

The title tax is paid once only, amounting to \$ 10 per hectare, for gold, silver and platinum; and \$ 2.50 for other minerals. This tax is paid in stamps which are cancelled on the same title.

According to this law the number of *pertenencias* which the Government grants, is unlimited, and the mining property enjoys the benefit of mortgage credit; the invasion by mining works of other properties is strictly prohibited without the consent of the owner.

The Reduction Works were no longer denounceable through abandonment, and became as any other industrial establishment.

The mining deputations which were formed by election of the miners were suppressed, and agencies were established which were appointed and dependent on the Department of Fomento, in all the principal mining camps of the Republic, of which agencies there are at present 138.

The law of the 6th. of June 1892 produced an immediate result, which was the establishment in the country of large mining and smelting works, the increase of silver production and cheapening of production.

A short time after this law was enacted, large smelters were established in Aguascalientes, Monterrey and San Louis, which are the most important ones in America, and form a considerable element in the comfort and richness not only of the States where they are established, but of the country in general. Foreign enterprises invested their capitals in increasing the working of mines in Mexico and all the mining world was able to see how a wise and liberal law saved the Treasury, and the Mexican Nation from the sharp monetary crisis which troubled all silver producing countries.

It is to this terrible crisis in part and greatly to the honesty and good will of the Government who gave out such beneficial laws, that the mining industry in Mexico owes its present development, evidences which development can be seen by all visitors at the Exposition of 1900.

We only have to mention the law of the 4th. of July 1894 issued with the exclusive object of encouraging the exploration and exploitation of auriferous placers and which authorized the Executive to execute contracts for the term of one year, granting special privileges.

In virtue of this law, the Executive of the Union executed two contracts which are still in force.

Finally, to form an idea of the influence which mining legislation has had in the increase of silver production, it is sufficient to glance at the following table.

This table gives data relative to the exportation of ores, bullion and silver, mexican coin. Preference has been given to exportation data over those of production, because they are exact, whereas those of production are somewhat deficient, and as one is intimately related with the other they will serve their object.

	QUINQUENNIAL OF FISCAL YEARS	SILVER Exportation of Ores, Bullion, Mexican Coin	Annual Average	Annual Average increase
Legislation of the States.	From 1880-81 to 1884-85	\$126.771,390	\$25.354,278	. . . . .
Unification of the Legislation in the Republic-Mining Code of 1884 . .	From 1885-86 to 1889-90	167.993,780	33.598,756	\$ 8.244,478
Law of 1892 - In force	From 1893-94 to 1897-98	267.417,591	53.483,518	19.884,762

AGENCIES OF THE DEPARTMENT OF FOMENTO IN THE MINING BRANCH

Agencies of the Department of Fomento in the Mining Branch, established in the Mexican Republic, and existing on the 30th. of June 1899

STATES AND TERRITORIES	AGENCIES	STATES AND TERRITORIES	AGENCIES	STATES AND TERRITORIES	AGENCIES	STATES AND TERRITORIES	AGENCIES
Aguascalientes.	Aguascalientes.	Durango	Cuencamé Durango El Oro Guanaceví Indé Mapimí Mezquital Nazas Nombre de Dios San Dimas San Juan de Guadalupe San Juan del Río Santiago Papasquiaro Topia.	Morelos. . . .	Cuernavaca.	Sinaloa. . . .	Badiraguato Concordia Cosalá Culiacán El Fuerte Mazatlán Mocorito Rosario San Ignacio Sinaloa.
Baja California.	Ensenada de todos Santos La Paz Mulegé.			Michoacán . .	Coalcomán Huetamo Morelia Tacámbaro Tlalpujahua.		
Coahuila . . .	Cuatro Ciénegas Monclova Múzquiz Ocampo Parras Romero Rubio Saltillo Sierra Mojada Viesca Villa del Carmen.			Nuevo León . .	Cerralvo Lampazos Linares Monterrey Villaldama.	Sonora	Alamos Altar Arizpe Guaymas Hermosillo Magdalena Moctezuma Sahuaripa Ures.
Chihuahua . .	Batopilas Cusiuhuirichic Chihuahua Chínipas Guerrero Guadalupe y Calvo Hidalgo del Parral Juárez Mineral de Ocampo Morelos Sabinal Santa Rosalía Urique.	Guanajuato . .	Guanajuato San Luis de la Paz.	Oaxaca	Huajuapam Oaxaca Silacayoapam Teotitlán del Camino Tlaxiaco.	Tabasco. . . .	San Juan Bautista.
		Guerrero . . .	Coyuca Chilpancingo Iguala Taxco Teloloapam.			Tamaulipas. .	San Carlos Victoria.
		Hidalgo. . . .	Pachuca Tulancingo Zimapan.	Puebla	Acatlán Chalchicomula Chiantla Izúcar de Matamoros Libres Puebla Tecamachalco Tehuacán Tetela.	Tepic.	Ahuacatlán Santiago Ixcuintla Tepic.
		Jalisco	Ameca Antlán Colotlán Etzatlán Guadalajara Guzmán Hostotipaquiillo Mascota.	Querétaro. . .	Pinal de Amoles Querétaro Tolimán.	Veraacruz . . .	Acayucan Jalapa.
Chiapas. . . .	Pichucalco San Cristóbal Las Casas Tonala Tuxtla Gutiérrez.					Zacatecas . . .	Chalchihuites Fresnillo Juchipila Mazapil Nieves Ojo Caliente Pinos Sombrerete Villanueva Zacatecas.
Colima	Colima.	México	Sultepec Temascaltepec Tenancingo Zacualpam.	San Luis Potosí.	Catorce Charcas Matehuala San Luis Potosí.		
Distrito Federal	México.						
TOTAL							138 Agencies.

MINING PROPERTIES

Mining Properties existing in the Mexican Republic

ON THE 30th JULY 1899.

RÉSUMÉ OF MINERAL SUBSTANCES.

RÉSUMÉ OF STATES

ORES WORKED.		TITLES.	HECTARES.	STATES.	TITLES.	HECTARES.
Antimony		39	1,547	Aguascalientes	98	334
Sulphur		33	147	Chiapas	11	143
Copper		221	2,184	Chihuahua	1,092	9,036
Copper and Iron		23	159	Coahuila	314	5,769
Copper and Lead		5	31	Durango	1,460	10,047
Tin		15	98	Guanajuato.	539	5,927
Iron		109	2,384	Guerrero	277	3,603
Manganese		4	7	Hidalgo.	463	3,526
Mercury		117	5,309	Jalisco	328	1,824
Opals		20	56	México.	242	3,021
Gold		872	8,666	Michoacán.	274	3,268
Gold and Copper		69	857	Morelos.	38	554
Gold and Silver		1,932	15,763	Nuevo León.	199	3,995
Gold, Silver and Copper		55	896	Oaxaca.	307	2,191
Gold, Silver and Lead.		40	307	Puebla	68	649
Silver		4,011	33,136	Querétaro.	55	496
Silver and Copper		192	1,637	San Luis Potosí	256	7,042
Silver, Copper and Lead		12	147	Sinaloa	366	3,451
Silver and Manganese.		3	35	Sonora	1,205	9,136
Silver and Mercury		2	14	Tamaulipas	63	616
Silver and Lead		1,162	10,848	Veracruz	4	24
Lead		31	294	Zacatecas	942	7,559
Fossil Salt		2	20	Lower California.	276	1,821
Zinc		1	15	Territory of Tepic.	92	524
				Federal District	1	6
Total		8,970	84,557	Total	8,970	84,557

List of the Mining Companies which on the 30th. of July of 1899, enjoyed the franchises and exemptions that were granted to them according to the contracts they executed with the Government in virtue of the law of the 6th. of June 1887.

STATES	MINING COMPANIES
Aguascalientes. . .	"Great Central Smelter of Aguascalientes."
Baja California. . .	"Progreso Mining Company" - Triunfo "Boleo Company, a French Concern" - Sta. Rosalía.
Coahuila	"Esmeralda Mining Company" - Sierra Mojada "First Mining Zone of Sierra Mojada" "Second Mining Zone of Sierra Mojada."
Chihuahua	"Carrizo Mining Company" "San Blas Company" "Hidalgo Mining Company" - Hidalgo del Parral "Barranca del Cobre Company" "New Pinos Altos Mining Company" "Mining Zone of Urbano Zubía" "Mining Company of Veta Grande" - Hidalgo del Parral "Palmarejo and Mexican Gold Fields" Limited. - Chínipas "Corralitos Mining Company" - San Pedro de Corralitos "Gold Mining Company of Cerro Colorado" - Batopilas.
Durango	"Mining Company of Peñoles" - Mapimí "Pittsburg and Mexican Tin Mining Company" - Coneto "Mining Company of San Andrés de la Sierra" "Mining Company of Candelaria de San Dimas."
Guanajuato	"Mining Company of the Artajéa Zone" "J. Andrade" - Bolañitos.
Guererro	"Garduño and Anexas Company" - Puerto del Oro "Ibero-Mexican Company - Pregones.
Hidalgo	"Mining Company of Lomo de Toro y Anexas" - Zimapán "Company of Real del Monte and Pachuca" - Pachuca Zone "Company of Real del Monte and Pachuca" - Real del Monte Zone.
Jalisco	"Arthur J. Moore and Company".
México	"Malacate Mining and Smelting Company" - Sultepec "Antonio Muñoz" - Temascaltepec "Sultepec Zone Company".
Michoacán.	"Mining Company of Angangueo" "Trojes Company" - Angangueo.
Nuevo León	"Maza and Sada" "Great National Smelter of Monterrey" "Nuevo León Smelting Company" - Monterrey "Monterrey Mining, Smelting and Refining Company" - Monterrey.
Oaxaca	"Peras Mining Company".
Querétaro	"Mining Zone of Rio Blanco".
Sonora	"Minas Prietas Mining Company" "Mulatos Company" "Sonora Placer Mining and Development Company" - Los Llanos and la Ciénega. Altar.
San Luis Potosí . .	"Mexican Metallurgical Company" - San Luis.
Tamaulipas	"San Nicolas Mining Company" "San Carlos Copper Company" - San José.
Tepic (Territory) .	"Compostela Mining Company" - Huicicila.
Veracruz	"Mining Zone of Zomelahuacán".
Zacatecas	"Candelaria Mining Company of Pinos" "Sombrerete Mining Company" "Mining Zone of Peñón Blanco" "San Bernabé Company" "Mazapil Copper Company, Limited" "Mining Company of Saucedo".

Mining Companies which on the 30th. of June 1899
enjoyed the franchises and exemptions that were granted to them according to the contracts
they executed with the government
in virtu of the Law of the 4th. of June 1894.

LOWER CALIFORNIA:
'Ibarra Gold Mining Company' — Calmahí.

OAXACA:
'Mexican Mining Co. of Auriferous Veins' — Taviches, Talea, etc.

LIST OF DIVIDENDS PAID IN 1898 BY THE MINING AND SMELTING COMPANIES
whose shares are quoted in the Market of the City of Mexico.

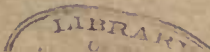
COMPANIES	NUMBER OF SHARES	DIVIDENDS PER SHARE	TOTAL AMOUNT
Minera de Peñoles — Durango	2,500	\$420.00	\$1,050,000.00
Santa María de la Paz — Matelhuala-San Luis Potosí	2,400	400.00	960,000.00
Minera Angustias — Pozos-Guanajuato	2,400	185.00	444,000.00
Alacrán y Anexas — Zacualpan-México	2,400	180.00	432,000.00
Esperanza y Anexas — El Oro-México.	3,000	140.00	420,000.00
Hacienda de Beneficio "Guadalupe" — Pachuca-Hidalgo	10,000	32.00	320,000.00
El Triángulo — Pozos-Guanajuato	2,500	72.50	181,250.00
Compañía Real del Monte y Pachuca — Hidalgo	2,554	70.00	178,780.00
Santa Gertrudis y Anexas, aviador — Pachuca-Hidalgo	28,800	6.00	172,800.00
Hacienda de Beneficio "San Francisco" — Pachuca-Hidalgo	6,000	24.00	144,000.00
Hacienda de Beneficio "La Luz" — Pachuca-Hidalgo	3,750	30.00	112,500.00
San Rafael y Anexas, aviador — Pachuca-Hidalgo	1,200	92.00	110,400.00
Hacienda de Beneficio "La Unión" — Pachuca-Hidalgo	3,000	32.00	96,000.00
San Rafael, aviado — Pachuca-Hidalgo	1,200	72.00	86,400.00
Amistad y Concordia — Pachuca-Hidalgo	12,800	6.20	79,360.00
Transmisión Eléctrica de Potencia — Pachuca-Hidalgo	7,000	10.00	70,000.00
Santa Fé, Matelhuala — San Luis Potosí	2,500	30.00	75,000.00
Nuevo Porvenir — Zacatecas	2,400	20.00	48,000.00
Nueva Quebradilla, aviador — Zacatecas	2,400	18.00	43,200.00
Cinco Señores — Pozos-Guanajuato	2,400	15.00	36,000.00
Santa Ana Mining Company — Huautla-Morelos	4,000	9.00	36,000.00
Hacienda de Beneficio "Bartolomé de Medina" — Pachuca-Hidalgo	2,000	15.00	30,000.00
Beneficiadora "San Luis" — San Luis de la Paz-Guanajuato	3,000	8.00	24,000.00
Guadalupe Fresnillo — Pachuca-Hidalgo.	2,400	10.00	24,000.00
San Felipe de Jesús, aviador — Pachuca-Hidalgo	3,600	4.00	14,400.00
Sorpresa, aviado — Pachuca-Hidalgo	960	15.00	14,400.00
Soledad, aviada — Pachuca-Hidalgo.	960	10.00	9,600.00
Hacienda de Beneficio "Purísima Grande" — Pachuca-Hidalgo.	1,000	5.00	5,000.00
Hacienda de Beneficio "San Agustín" — Guanajuato	1,000	5.00	5,000.00
Santa Gertrudis, aviado — Pachuca-Hidalgo	9,600	0.20	1,920.00
TOTAL			\$5,214,410.00

NOTE —There are several mining enterprises in the Republic which are being worked and whose shares are not quoted in the Capital of the Country.
All values are in Mexican Silver Dollars.

GEOLOGY

Synoptical Table of Mexico's Geology

GROUPS	SYSTEMS	SUBDIVISIONS	GENERAL REMARKS
Azoic or primitive.	. . . . .	. . . . .	The archaic rocks are sufficiently numerous, of varied nature and present at times some perfectly visible transitions.
Paleozoic or primary.	Cambrian.	. . . . .	Granular lime, marbles and chertites (Sonora) referred to the Cambrian by the Geologist E. T. Dumble.
	Silurian.	. . . . .	Lime (Sonora) referred to the Silurian by the same Mr. E. T. Dumble.
	Carboniferous.	. . . . .	Its existence is a fact clearly proved. This ground is directly underneath the Cretaceous.
Mezozoic or Secondary.	Triassic.	Superior.	The rocks do not occupy large extents, but show themselves in several points.
	Jurassic.	Liasic.	The rocks show themselves in different places of the country.
		Supra-jurassic.	Very little known in Mexico and generally passes unperceived because it is directly underneath and in concordant stratification with the Cretaceous, in such manner that if its fossils are not considered it is confused with the base of the Cretaceous.
	Cretaceous.	Inferior.	The deposits of the Cretaceous comprise numerous horizons, have a potency of considerable extent and occupy a very large area.
		Middle.	The limes of the Middle Cretaceous are very rich in fossils.
Cenozoic or tertiary.	Paleocene.	Eocene and base of Miocene.	Of the divisions of the Tertiary the Middle and Superior are barely represented. The sedimentary rocks of Tertiary of greater antiquity belong to the Inferior Eocene. On top of these there are other rocks, part of which corresponded to the Eocene and some to the Miocene.
	Neogene.	Neocene superior to the Pliocene.	There exist strata in Lower California that cannot be more ancient than the Superior Miocene.
		Pliocene.	Some conglomerates of the country of a red color belong to the Superior Tertiary or Pliocene.
Quaternary.	. . . . .	Champlain.	The quaternary rocks are diluvial, alluvial and marshy.
		Recent.	They are very common in Mexico and are found occupying the superior part of the valleys and the region of the Central table-land.



SYNOPTICAL TABLE

of the

GEOLOGICAL DISTRIBUTION OF MINERAL BEDS IN MEXICO

GROUPS	SYSTEMS	MINERAL MATTER	Mineral beds and regions of the country where they are found.
Azoic or Primitive.	. . . . .	<p>Iron.</p> <p>Gold.</p> <p>Copper.</p> <p>Asbestos.</p> <p>Piropo (a variety of granite.)</p> <p>Emeralds.</p>	<p>Hematites in interstratified pieces in the mica-slates and stringers (Guerrero.)</p> <p>Magnetites (South of Puebla and North of Oaxaca and Guerrero.)</p> <p>Veins and stringers of auriferous quartz formed in the contraction fractures through cold, of the eruptive primitive rocks (Oaxaca and Guerrero.)</p> <p>Argentiferous veins lying in crystalline slates (South of Puebla.)</p> <p>In small veins disseminated in mica-slates and in clayish slates.</p> <p>In slates and granites.</p> <p>In mica-slates and layers (Tejupilco, State of México.)</p>
Mezozoic or Secondary.	Triassic.	<p>Coal.</p> <p>Iron.</p> <p>Silver.</p>	<p>Layers of some few milimitres in thickness intercalated with sands and slates and of no industrial value (South of Puebla and North of Oaxaca,) and layers from some centimetres up to one and two metres thickness (Sonora) which contain from bituminous coal and pit-coal of different kinds up to anthracite coal, anthracite and metamorphical graphite the metamorphosis being due to the action of diorites, diabases and andesites on their opening a passage in the deposits of a sedimentary nature of Keuper.</p> <p>Hematites, ferrugineous ochres and sperosiderites, mixed with Keuperian rocks and associated with the slates.</p> <p>Veins produced by the appearance of igneous rocks of the Tertiary period that crack the triassic rocks and occasion the filling of the fractures.</p>
	<p>Jurassic.</p> <p>Cretaceous.</p>	<p>Gold & Silver.</p> <p>Lead.</p> <p>Mercury.</p>	<p>In limy slates of the superior part of the Jurassic, there are some beds of an aure-argentiferous nature very rich (Tetela del Oro in the State of Puebla.)</p> <p>Veins and placers very irregular in cretaceous limestones, these forming the basis of the plumbago ores (Sierra Mojada in Coahuila—Mapimi in Durango—Zimapan in Hidalgo—Cerralvo in Nuevo Leon.)</p> <p>Cinnabar with Livingstonite or Guadalcazarite is found disseminated in cretaceous limestones, where it appears to penetrate through the pre-existing cracks and afterwards impregnates the rock.</p>

GROUPS	SYSTEMS	MINERAL MATTER	Mineral beds and regions of the country where they are found.
Cenozoic.	Copper.	Placers accompanied by grossularite and hematite, cut the rocks of the cretaceous, and come from the appearance of igneous rocks being of a metamorphical origin.
		Antimony.	In regular veins in cretaceous limestones (Sonora.)
		Iron.	Sexquioxides and magnetic oxides in powerful veins formed in cretaceous limestones of the Middle or Inferior, but in no case in the Superior (Hill of Mercado in Monclova, Coahuila—Encarnación in Zimapan, Hidalgo.)
		Sulphur.	Deposits of sulphur (native) disseminated in chalk and filling cavities and cracks in cretaceous lime-stone (Sierra de Banderas in Mapimi, Durango.)
		Manganese.	Sufficiently powerful veins of pirolusite, psilomelan and wad (Puebla.)
		Coal.	In the last layers of the Superior Cretaceous there are layers of coal of regular strength and good quality and which form the beds of most importance in Mexico. (Sabinas, Hondo, S. Felipe and Sta. Rosa in Coahuila.) Coal in thin strata and of good quality, but without interest for industry, is found in the lower part of the Cretaceous.
		Marbles.	White of varied grain and due to the metamorphosis of the limestone.
		Topaz. } Garnet. } Pyroxena. }	The larger part are of metamorphical origen and are found near the contact between the igneous rock and the limestone.
		Cipolene Marble.	The limestone metamorphosed into diorite has been converted thanks to the penetatrimon of the hornblende in its mass and the later alteration of said mineral into serpentine and chloritoid, into a magnificent cipolcne.
		Manganese.	Veins of psilomelan accompanied by chalk lying in trachytes (Mulegé, in Lower California.)
		Tin.	Small veins in Rhyolite that appear formed by a direct emanation and in fractures of contraction caused by cooling.
		Copper.	Regular veins in hornblendic andesites and which could be called of the «Inguran type,» its filling was at the beginning of the Pliocene. Irregular beds in the same rocks and perhaps depending from the cracks of these veins. Stratified layers in sedimentary rocks of the Superior Myocene and whose age corresponds to the superior part of the Myocene or to the base of the Pliocene (Boleo, in Lower California.)
		Silver.	Stringers in eructive rocks of the Tertiary andesitic porphirites, hornblendic andesites and other varieties of these rocks or in sedimentary rocks intimately related with those eruptive rocks.

GROUPS	SYSTEMS	MINERAL MATTER	Mineral beds and regions of the country where they are found.
			<p>The beds we are treating of which have been formed in the course of the Pliocene are the ones that have given fame to México as a producer of silver since the time of the Conquest.</p> <p>Gold.</p> <p>Concretionary veins of auriferous quartz formed in hornblendic andesite (San José de Gracia in Sinaloa)—Mesquital del Oro in Zacatecas.</p> <p>Veins of auriferous mineral in andesitic diorite and granulites that cut the cretaceous limestone (San José del Oro in Hidalgo—San Jose in Tamaulipas.)</p> <p>Antimony.</p> <p>Stibnite Veins accompanied by galena, blende and pyrites, having the ores in concretionary zones and which have only been worked on a small scale (Municipality of Cualac, in Guerrero.)</p> <p>Kaolin.</p> <p>Resulting from the alteration and decomposition of eruptive rocks of the Tertiary (Zacualtipan in Hidalgo. Santa María Coyuca in Puebla.)</p> <p>Opals.</p> <p>Of varied and beautiful colors, coming especially in rhyolites—(Esperanza in Querétaro—Maravatío in Michoacán—Zimapan in Hidalgo.)</p> <p>Sparragine (a variety of Apatite.) Chalk.</p> <p>In Rhyolites (Cerro del Marcado in Durango.) Sedimentary deposits (Yuxtlahnaca in Oaxaca) The very powerful formation of Hnamuxtitlan in Guerrero is with all probability contemporaneous with the preceding one.</p> <p>Obsidian.</p> <p>Is found abundantly in eruptive Tertiary rocks.</p> <p>Tecali.</p> <p>The white tecali of San Antonio de las Salinas near Tehuacan (Puebla) can be referred almost with certainty to the Superior part of the Pliocene.</p>
Quaternary.	<p>The detritic beds which in Mexico are called placers are the only ones found in quaternary ground.</p> <p>Gold.</p> <p>Placers (Lower California—Sonora—Chihuahua—Durango—Tepic—Oaxaca—Guerrero—Jalisco—Michoacán.)</p> <p>Tin.</p> <p>Placers (Durango—Zacatecas—Guanajuato—San Luis Potosí—Jalisco.)</p> <p>Iron.</p> <p>Placers (Bolson de Mapimi—in Durango—and Coahuila.)</p> <p>Tecali.</p> <p>Also called Mexican onyx, it almost all belongs to the Quaternary period and has been formed in the vicinity of limostenes more or less pure or of slates having more or less carbonate of lime. In both cases the carbonate is dissolved by the running waters and abandoned later in thin scales which overlap one another and with a composition more or less the same they form the deposits of this beautiful rock.</p>

WORKING OF MINES

WORKING OF MINES IN MEXICO.

The working of mines in Mexico has progressed remarkably during the last ten years, as will be seen by the brief facts set forth.

EXPLORATIONS. — In the carboniferous layers of San Marcial (Sonora) diamond drills were employed to explore them.

MINE WORKINGS. — *Durango.* The "Promontorio" mine in Santiago Papasquiaro, property of Mr. Maximiliano Damm, has ten levels, and the vein has a streight of five to twenty five.

It is calculated that the ore in sight is sufficient for fifty years of exploitation.

This is one of the best worked mines in the Republic.

Hidalgo. The working of mines in Pachuca was commenced in open cuts, combined with tunnels; later on incline shafts were used and lastly the vertical shafts, the only ones employed at present. The San Pedro shaft of the Real del Monte Co. has a depth of 504.12 metres.

The deepest shafts of Real del Monte and Pachuca are:

Amistad	1,312 feet.
El Bordo.	1,212 „
La Luz	1,181 „
La Camelia	1,046 „
La Luz No. 2	1,027 „
La Corteza.	1,026 „
Barron	1,010 „
El Cristo	1,007 „

Five of these shafts belong to the above mentioned Company.

The Xacal cross-cut in Pachuca, has a lenght of 600 metres on the level of the San Francisco shaft.

The Ingersoll drills were used with good success in the "Dificultad" shaft and in the Aviadero tunnel.

In the former, they were employed in 1887, drilling four metres per week at a cost of \$ 250 per metre; where as by hand only one metre per week was done at a cost of \$ 300.

In the "Aviadero" tunnel, 200 metres North of "Dificultad" were drilled with these drills, doing eight metres per week at a cost of \$ 120 per metre, whereas by hand only 2½ metres were done at a cost of \$ 100 per metre.

Mexico. Thi Mining Co. of Rincon (Temascaltepec) set up a large plant of machinery which cost one hundred thousand dollars, with which to use compressed air.

San Luis Potosí. The Mining Company of "Union Catorceña" was the first in the Republic, that in 1877 set up machinery for compressed air, so as to mechanically open the "Purísima Concepción" tunnel, and so as to drain the "San Agustin" mine and others of Catorce.

EXTRACTION AND DRAINAGE. — The Electric Transmission Co. of Hidalgo, supplies electric power to the "San Rafael" mines and to the Reduction Works of Guadalupe, Unión and Purísima Grande in Pachuca, as well as to the "Dificultad" in Real Del Monte.

In the generating power station of this Company, there are five Pelton wheels, of 40 inches diameter and 600 H. P. each, the generating dynamos are of tri-phase current, giving 600 revolutions per minute and producing a current of 700 volts; the potential strength reaches 10,000 volts at the end of the generator.

The "San Rafael y Anexas" Co. has electrical machinery built in Germany in order to drain its mines. In the last shaft of these mines they have set up some powerful pumps that have given very satisfactory results.

The "Maravillas y Anexas" Co., also set up in the "Carmen" shaft, some new machinery for draining by the Cornish system; the plunger has a diameter of 60 inches so that together with the one of 75 inches that already existed in Xotol, and with the San Rafael pumps, they could control the large invasion of water in the "Camelia" mine. The first machinery for draining which was set up in the country, was in the "San Nicolas" shaft in 1853; later on those of "San Juan and San Pedro", both are of the Cornwall system; that of "San Juan" is of direct transmission and that of "San Pedro" is of counterweight.

The "Cerro Colorado" and "Potrero" Companies in Chihuahua, have some excellent Corliss motors, built by the "Compañía Industrial" in said State.

TUNNELS.

Chihuahua. The "Porfirio Díaz" tunnel in Batopilas, is without doubt, one of the most important works of its kind in the country. It belongs to the "Batopilas Mining Co."; was commenced in 1884 in order

to explore the northern zone of Batopilas, so as to reach the levels of the "Roncesvalles" mines, on the vein of the same name, which is the mother-vein of that region.

It is estimated to be 10,500 metres long having cost about two million dollars. It starts from the "San Antonio" mill and will end at the "Descubridora" mine; cutting more than 100 veins amongst which will be the principal ones of the locality and many others.

Lately it had been drilling 26 metres per week, but with the new machinery it is expected to do 60 metres per week.

The first 365 metres were done by hand after which some compressed air drills of the Rand system were employed; in 1894 the Ingersoll drills were used.

The great difficulty encountered in this work is the hardness of the rock; the weekly progress with mechanical drills was 6 metres 10 centimetres in the rock and 10 to 14 metres on the veins.

The ground of this tunnel will be 411 metres lower than the levels of the "Roncesvalles" mine.

At present it has a length of more than three kilometres and has already cut some of the principal veins of Batopilas.

Guanajuato. The State of Guanajuato amongst other works of this kind, counts with the tunnel of "San Gayetano de las Ovejas" which is the outcome of more than twenty years of work on the part of two Companies; it cuts the first vein at a depth of 2,000 metres.

It suffered a few interruptions in its work but is now advantageously worked by an English Company.

The "Sirena" tunnel, 620 metres long, is also in ore in Guanajuato.

Hidalgo. There are many tunnels of more or less importance in the State of Hidalgo; amongst others we will mention the following:

"Nepton", planned by Engineer Gabriel Mancera, between the mining camp of "El Chico" and the City of Pachuca; with a level 426 metres under the market of that City. It starts from "El Chico" and on reaching a depth of 2,090 metres it easily communicates with the shaft of the "California" mine thereby furnishing ventilation; in 1896 there were 400 metres done.

"Girault". This tunnel was planned by the Engineer who gave it his name, in December 1895, when water to the amount of 600 gallons per minute invaded the "Camelia" mine.

It belongs to the Real del Monte y Pachuca Co. and was commenced in May 1898, it starts from the mouth of the "Loreto" mine and will end in the "Camelia" mine which is on the "Vizcaina" vein.

Its works are far advanced, being at 200 metres under the mouth of the principal shaft of "San Rafael" at 160 metres from the mouth of the "Camelia" mine and 150 metres from that of "La Luz."

El Rosario. This has a length of more than 1,200 metres, being on a vein and has served to survey, explore and drain the mines on the vein of this name.

Prosperidad. This has a length of 900 metres.

We give a detailed account of the "Aviadero" tunnel in the Chapter dedicated to the Real del Monte Co.

Michoacan. In Tlalpujahua a tunnel has been commenced, which starts in Tepetongo, and whose principal objet is to drain the historical mines which belonged to Laborde.

San Luis Potosí. The "Purísima Concepción" tunnel in Catorce, is one of the most important ones in San Luis Potosí, having been started by Engineer Lopez Monroy; its section has a height of 4 metres 2 decimetres by an equal width.

At 2,000 metres it commenced to drain the mines; its floor is at 400 metres lower than the mouth of the principal shaft.

The following comparative table will give an idea of the cost of this work:

	Lineal metre of drilling	Per cubic metre of rock	Lineal progress per week
Hand drilling using black powder . .	\$102.43	\$ 5.81	4 met. 63 centim.
Hand drilling using nitro-glycerine . .	84.33	4.78	5 met. 35 centim.
Using drills and nitro-glycerine . . .	264.17	14.97	13 met. 44 centim.

In the same camp, there is to be found the "Refugio" tunnel which 838 metres depth.

That of "Dolores" also situated in the State of San Luis Potosí, having a depth of 1,500 metres.

Zacatecas. The "Purísima" drainage tunnel, an important work of this kind, took seven years of labor and cost \$ 500,000; it belongs to the "Sauceda Mining Co."

It is the first work of this class carried out in Zacatecas and was built so as to drain the mines on the Veta Grande and San Acacio, which were inundated up to the mouth of the shafts. It is situated at 218 metres vertically from the mouth of the principal shaft, cutting 24 veins, and with a length of 1,900 metres of which only 200 were done by hand and the rest with mechanical drills. This important work was finished in 1894.

TRANSPORTATION OF ORE AND MINING RAILROADS.

Mining has rapidly progressed in this sense during the last ten years and as a proof of it we will briefly mention some of the new means of transportation employed by the most important Companies, and some of the mining railroads which have been worked for the last few years.

Lower California. In the "San Juan" mines (Los Angeles Bay) a wire tramway is used of the Hallidie system, of San Francisco, California, having a length of four kilometres.

Chihuahua. The "Cerro Colorado" Co. employs an aerial tramway of the same system as the former one and which by its own gravity transports the ore to the mines or the Reduction Works.

Durango. The "Candelaria" concern, uses an aerial cable tramway to lower the ore from the mines to the smelter.

This tramway has a capacity of 50 tons per diem, with a total cost of transportation of twenty dollars. The cable has a length of 2,000 metres.

The "San Andres de la Sierra" Company also employs a cable tramway, having a length of 15,517 feet and an inclination between its ends of 4,100 feet.

The "Peñoles Mining Co." employs several railroad lines, namely; an adhesion line with a length of 29½ kilometres from the station of Bernéjillo on the Mexican Central R. R. to Mapimi, and from this place to the foot of the mountain.

Width of road	2 feet 6 inches
Weight of rails	25 lbs. per yard.

A rack railroad of the Abt system, from the foot of the mountain to the mines:

Length	3.2 kilometres.
Width of road	2 feet 6 inches.
Weight of rails	40 lbs. per yard.
Total elevation	1,015 feet.
Grade	13.6 %.

The total cost of the railroad and rolling stock was five hundred thousand dollars.

This Company has besides, a suspension bridge to unite two of its principal mining camps, separated by a precipice:

Horizontal distance of the towers	1,030 feet.
Difference of level between towers	71 ,, 9 inches.
Exact length of Bridge	940 ,,
Width	6 ,,
Difference of level between two landings	46 ,, 3 ,,
Total suspension weight	112 ²¹⁰ tons
Capacity of bridge with a safety factor of	2 ⁸
equal to	17 ⁸⁰⁰ ,,

The steel cable are No 6 having a thickness of two inches.

The total cost of the bridge was of \$40,000; \$25,000 being for material and \$15,000 for labor.

Nuevo-León. The "San Pedro" mine in Monterrey employs an aerial road with wire cable, having a length of 700 metres and carrying the ore to one of the stations of the mining railroad.

In the "Azteca" mine situated on the "Mitra" hill, also near Monterrey, there is also a cable road from San Antonio to the railroad station; the cost of this installation was \$35,000: it has a capacity of 6,000 tons per month and the transportation costs 20 cts. per ton.

Up to the station of Leona on the National line, the transportation costs \$1.25 per ton and from this station the Railroad carries the ore to the smelters, charging 50 cts. per ton and the smelter charging \$4.00.

There is a small cable being set up between the mine and San Antonio and \$1.50 per ton will then be economized on the transportation and treatment. The ores of this mine carry from 5 to 7 ozs. silver and from 19 to 20 % of lead; they are worth from \$15 to \$20 per ton.

Sonora. A French Company owning large salt beds and metalliferous mines near Caborca, has set up a railroad of a system recently patented; with a length of 15 miles up to Caborca.

The road has one single rail, animal traction being used, and this road is the second of its kind that has been set up since its invention.

The construction is cheap and very economical in its service; the rails weigh from 4½ to 12 kilograms; per lineal metre. In ground having an inclination of 50 milimetres per metre, a horse can easily haul three tons of ore.

MINING RAILROADS.

The principal mining railroads that at present are being worked in the country, are:

Coahuila. Ferrocarril del Norte, between the Sierra Mojada mining camp and the station of Escalon. Ferrocarril del Hondo, the property of the "Compañía Carbonífera" of Coahuila.

F. C. de Coahuila and Zacatecas, between the "Concepción del Oro" mines and Saltillo, the Capital of the State.

Chihuahua. Ferrocarril de Santa Eulalia, with a length of fifteen miles, between the old mining camp of Santa Eulalia and the Smelter of the Chihuahua Mining Co.

Ferrocarril de Hidalgo del Parral, between this mining camp, situated on the slopes of the Sierra Madre, and the station of Jimenez. It has a length of 104 kilometres.

F. C. de Rio Grande, Sierra Madre y El Pacifico; starting in Ciudad Juarez and terminating in Casas Grandes.

Nearly all the shareholders of the Corralitos Mining Co. are also shareholders of this railroad.

Durango. In December 1899 there were 30 kilometres of road laid on the Guanacevi R. R.

Mexico. In January 1900 a railroad was inaugurated, between the mining camp of El Oro, and the station of Tultenango on the National R. R.

Nuevo León. The Carmen R. R., belonging to the Guadalupe Mining Co. joins the mines of San Pedro, San Pablo and Saragoza, having a length of 23 kilometres. Its terminal point is at 2630 feet lower than the initial one; the capacity of cars is of 4²⁴ tons; the total cost came to \$140,000 gold or \$9,600 per mile.

The average contents of the ores of these mines, is 12% lead, 3 ozs. silver and 32% iron.

San Luis Potosí. In 1896, a subterranean railroad was started, from Real de Catorce, crossing all the Sierra, by means of a tunnel and which will branch in the Potrero with the Matehuala road passing through the "Dolores" tunnel which was started in the XVIII century.

In 1896 there were two kilometres of this important line built.

Sonora. Railroad from the station of Torres on the Sonora road, to Minas Prietas, a mining camp at present in active work.

OTHER MEANS OF TRANSPORTATION.

Chiapas. The "Compañía Minera Limitada de Chiapas", has two paddle wheel steamers, that carry its ores down the river of the Sierras as far as San Juan Bautista.

From this point, there are some local steamers, belonging to the same Company, that carry them to Frontera, where they connect with two lines of Gulf steamers.

Chihuahua. Mr. Samuel Brodie, is the sole proprietor of a special service of Concord cars, organized by himself, to cross the Sierra Madre of Batopilas.

The passenger cars are splendidly equipped and are very comfortable and light; the freight cars are Concord, Bain & Studebaker. They are hauled by teams of twelve to fourteen mules.

REAL DEL MONTE AND PACHUCA COMPANY.

The Pachuca mining camp was, if not the first, at least one of the first that the Conquerors worked and exploited in Mexico.

Its antiquity, therefore, the large amounts of silver that have been extracted from its ores and which still continue to be extracted, and the several Reduction Works found there, make of it at present, one of the most important mining camps of the country.

In that mining city *par excellence* and in the neighboring district of *Real del Monte*, are to be found mines and smelters belonging to the important Company whose name heads these few lines.

As this enterprise can serve as a typical example of the value in mining matters, of continuous and intelligent administration and working, we believe it opportune to give a brief sketch of the evolution gone through in the exploitations of this Company; as wonderful progress has been obtained both in production as well as in the methods and elements of working.

This Company was formed in London in 1824, the greater part of the mines that belong to it, having been previously worked by the Spaniards Terreros and Bustamante.

During several years, from 1824 to 1848, the production of these mines fell of a great deal but in the last year mentioned an improvement was noticed; and ever since 1877 it has been the greatest silver-producing district in the Republic, continuing so up to the present and it will undoubtedly be so for some time yet.

The restoration of this District is owing totally to the Real del Monte y Pachuca Co. that with its works in the tunnel of Rosario and the drainage of the San Juan shaft, raised the mining industry throughout the district.

With regard to methods and elements of work, we will briefly describe those carried out, which in the majority of cases was done by slow and gradual evolution.

DRAINAGE OF MINES.—The horse hoists that extracted the water with buckets, have been substituted by steam machinery with powerful pumps. The machinery set up in Real del Monte and Pachuca consists in general of motors set up outside, with pumps worked by a rigid bar.

Of these machines, all those established, with one sole exception, in a period of nearly three quarters of a century, have been of the simple effect Cornwall type, constructed with simple effect pumps and counterweights attached to the rod, with large levers for the counterweights.

The only exception has been that of the machine set up in the "Dificultad mine, by the Real del Mon-

te Co. in 1889; it commenced to work in 1890, being of double effect, Wolf system, with Rittinger pumps and hydraulic counterweights.

It is one of the most perfect plants of those built in Germany and the only one of its kind in the country; we herewith give its description:

Motive power.	900 H. P.
Velocity of plunger	3 metres.
Diameter of high pressure cylinder.	1.20 metres.
Diameter of low pressure cylinder	1.95 „
No. of revolutions in normal work.	10.
Litres of water taken out per complete revolution	1,400
It raises the water from.	500 metres.
Depth to	313 metres.
to the tunnel of Aviadero.	

The cost of the machines and their installation, came to \$500,000.
The use of snbtterranean steam engines has been exceptional and of short duration in all cases, as well as that of engines of compressed air by pumps.

In 1897 the "San Rafael" and "Real del Monte" Companies simultaneously commenced to use pumps with subterranean electromotors the use of which, after smoothing away some difficulties, appears to have acquired a great development. The electro-motors so far set up are of tri-phase current, which they receive at a tension of 100 to 1,000 Volts.

With regard to natural drainage works, the only important one has been the termination of the "Aviadero" tunnel, in Real del Monte.

In Pachuca some tunnels of medium importance have been opened up, of which we have already spoken. The most remarkable one is the "Girault" tunnel, already mentioned; and of which its author says that it is similar to the work planned by the third Count of Regla in 1824.

ORGANIZATION OF WORK.—Work is done by the task and by lots, instead of by wages. The work done by lots was organized some twenty five years ago, on a uniform and just basis.

EXTRACTION.—Nearly all the mines have substituted horse hoists with steam machinery; the interior horizontal transports have been perfected, establishing railroads, in the levels of the mines.

DRILLING AND EXPLOSIVES.—The principal improvements in this branch have consisted in exchanging powder for dynamite; and iron drills for those of steel.

OUTSIDE TRANSPORTATION.—Wagonroads have been opened to nearly all the most important mines, which facilitate the transportation of ores and heavy pieces of machinery.

PLANS OF WORKS.—The exterior topographical works as well as the subterranean oues of this Company, could serve as models in any country.

WORKSHOPS.—In 1858 all the different workshops of the Company in Real del Monte, which were scattered throughout the mines and smelters were united into one Central Workshop.

METALLURGY

MEXICO'S PROGRESS IN METALLURGY

FROM 1889 TO 1899.

Before setting forth in detail those facts that show Mexico's evolution in Metallurgy, from 1889 to 1899, it appears to us proper to briefly sketch such evolution. In the Mexican Republic there exist several establishments for concentration of ores set up according to modern perfections; as all concentrating types which Science now recognizes as the most complete, are to be found in some of the said establishments.

We should call attention especially to the fact that the most important ones are those using machinery built in Germany.

With regard to reduction systems, the following table will at once give a clear idea of Mexico's advance in metallurgical works:

AMALGAMATION	Direct	{ In «arrastras» and other crushing devices. In copper amalgamating plates.
	Patio	{ Common. Valerio Ortega (amalgamation without chlorine.)
	Barrels	{ Common (Freiberg system). Krönke. José María Cesar.
	Pans or Washoe	{ Common. Continuous of M. P. Boss.
LIXIVIATION. . .	{ Common. Russell.	
CHLORINATION .	Plattner	
CYANIDING . . .	Mac. Arthur-Forrest.	
CALCINATION. . .	{ Calcination. Calcination & Reaction	
SMEETING. . . .	{ Anciet Way on Spanish Furnaces Modern Way in Water Jackets. .	

With regard to the separation of precious metals, besides the common system, the modern one of Bernardo Moebius is also applied, and used by an important Company, that owns the second installation of this kind in America.

In the patio system, all necessary modifications have been introduced in the crushing, assaying and chemical proceedings, for their perfection as far as possible in this system. An important and practical example of this, is found in the Guadalupe Works, that employes electricity as motive power and is situated in the City of Pachuca, State of Hidalgo. Comparing the actual patio systems, with those formerly used, we can at once observe a great economy and less consumption of mechanical power.

Amongst the most important modifications in the common patio system, we must mention the invention of Engineer Manuel Valerio Ortega, consisting in the production of amalgamation without chlorine.

The inventor claims that less quicksilver is wasted, that the torta render their values in a relatively short time and that his system is more economical than the common one.

Some experts of Guanajuato and Pachuca have issued certificates asserting that they have assisted at some experiments with the above mentioned system, and that it is an improvement on the patio one; but in reality, we are still without sufficient practical data to affirm that this discovery is important.

In the «La Union Works» (Pachuca) the Krönke system is used, and in that of «Bartolome de Medina» (Pachuca) that of J. M. Cesar is employed, being a variation of the amalgamating system already known and consisting in the use as a reactive, of chloride of copper.

The continuous system of M. P. Boss, which as known is of great importance, is used in several Works on a large scale and others are being built where it will also be used, as its practical results are well proved.

Russell's lixiviation system, has been used on a large scale in several metallurgical establishments and always with good results.

Plattner's system for treating gold ores, was first employed in the Peras Co. (Oaxaca) and according to data given further on in this work, it gave good results.

Mac. Arthur-Forrest's system in Mexico is due to the «Silver & Gold Recovery Company». This concern works the above patent in the whole Republic.

Large Works have been built in different points in the country with the object of employing said process.

The first were set up in the State of Sonora, the second in that of Mexico and the third in that of Oaxaca.

In the State of Sonora, some ancient dumps were treated with this system, and with good pecuniary results.

Lastly, the smelting process, of such importance in Metallurgy, has radically changed in the past ten years; the Spanish furnaces are no longer used and both for smelting lead ores as well as copper ores, the country counts on large plants that can figure among the first on the American Continent.

REAL DEL MONTE & PACHUCA CO.

This Company, which is the oldest in the country, will serve as a model for what we have above stated.

In the time of the Counts of Regla, the ores treated were exclusively by the patio system and only the very rebellious ones and of high grade were smelted.

In 1760, the first Count of Regla built a smelter, which was afterwards reformed by the Company, substituting Spanish furnaces for German ones of 10 tons a load.

This smelter was closed in 1886, as it appeared more economical to export the rich ores than to treat them.

In 1884 the Company commenced to experiment with the barrel system and in 1849 Freiberg's system was employed on a large scale. From 1849 to 1858, there were treated:

1,822 tons with	1,922 kgs. silver by lixiviation.	Agustin.
4,292 „ „	55,164 „ „	by smelting.
38,639 „ „	69,209 „ „	by patio.
193,033 „ „	324,734 „ „	by barrels.

At present by the patio system, 50% of the production is treated; 5% by the Freiberg system; 15% by Krönke's barrel system; 15% by pans; and the remaining 15% by smelting in Aguascalientes, El Paso and England.

The patio treatment has gone through no important modification during the whole century, but several innovations have been added to it, that render it more economical than in former times.

In 1879 the Company set up a Sulphuric acid Factory and a Separation office.

CONCENTRATION.

The Mexican Republic has the following principal establishments for this purpose:

Aguascalientes.—In the Great Central Smelter situated in the capital of this State, there is a mill where copper auro-argentiferous ores are concentrated, from Tepezalá.

Coahuila.—The «Pánuco Copper Company» in the mining camp that gives its name to this important concern, has an office for concentrating common ores, containing from 10 to 12% until they reach 28% copper, when it pays to export them.

Chihuahua.—The Juarez Concentrating & Smelting Works Co. was formed in New York with a capital of \$100,000 gold and established at its smelter in Ciudad Juarez, a concentrating office with a capacity of 300 to 500 tons per day.

Chiapas.—In Santa Fe Pichucalco, the Chiapas Mining Co. Ltd. of London, owns a concentration mill that produces 60 tons daily.

The average assay of ores concentrated there, is from 3 to 4% copper; .00.2 of gold and from .0010 to .00.50 of silver; the gold being in a native state.

The loss of residues is 55% silver, 49% gold and 47% copper.

In this Mill, the residues are submitted to a new treatment consisting in crushing them with stamps and passing them over amalgamating copper plates, covered with a solution of cyanide of potash.

In this operation, the final gold loss is from 15% to 25% of that contained in the residues; the ores are concentrated until they give an assay of 40% copper, 0.2 gold and 2 of silver.

Durango.—In the San Francisco Range, the mining concern of Promontorio has a large office for concentrating in which German machinery is used.

Hidalgo.—In Pachuca, the San Rafael Co. also works a mill for concentrating ores, the machinery is German and of the most modern class in Mexico.

Nuevo Leon.—The American Company working the Vallecillo mining camp, has established there an important mill where argentiferous ores are mechanically prepared and concentrated, as well as lead and zinc ores. The machinery used is German; and it should be noted that this Company was the first in Mexico to export zinc ores resulting from that mechanical preparation.

Sinaloa.—The Hidalgo y Anexas Mining Co. has set up, in El Rosario, a concentration mill where Wilfley concentrators are used for ores that on an average have an assay value of 0.07 silver and 0.006 gold.

The concentrates assay 1.08 silver and 0.2 gold.

Sonora.—In the Dura district in Hermosillo, there is one of the best mills in the country employing German machinery; it concentrates from 30 to 40 tons of ore per day.

In the Plomo district, the National Mexican Mining & Development Co. has also set up its concentration mill.

We have only mentioned the most important establishments, which at present exist in Mexico for concentrating ores and residues from the treatment of same; but it can be affirmed that in nearly all the Reduction works of any importance in the country, modern machinery is already employed for the above object proceeding mostly from Germany and the United States.

SYSTEMS OF TREATMENT.

PATIO AMALGAMATION.—This system which is the best known and most used still, in the ancient mining camps to the South and central part of the Republic, was invented by Bartolomé de Medina in 1557.

Its inventor commenced to use it in the Reduction Works of «Purísima Grande» which still works in the City of Pachuca.

A few years after this important invention became known, it was employed in several mining camps in South America and we can affirm that by means of this system, nearly all the silver which the Conquerors extracted from Mexican mines, was treated.

Since the Conquest until a few years ago, 90% of the silver treated in Mexico was done by this system.

The following table represents the percentage of silver treated by the patio system in the years given:

1893	78
1894	75
1895	43
1896	31

In the Zacatecas district where nearly all the reduction works employ this system, the following amounts of precious metals were obtained in the three years mentioned:

	Gold.	Silver.
1895	187 kilog.	57,247 kilog.
1896	147 „	55,646 „
1897	156 „	74,415 „
Total.	490 „	187,308 „

The Valerio Ortega system which is the only important modification made in the Bartolomé de Medina system, was invented a few years ago in the Fresnillo Mill, belonging to the Proaño concern, State of Zacatecas, and as already said, consists in producing amalgamation without the previous use of chlorine, but employing sulphuric acid instead.

It is to be noted that the matrix of the Proaño ores in which ore experiments of this kind have been made, contains in general matters that are not altered by this acid.

In a certificate of a mining concern of Zacatecas, it is stated that treatment by this system was made in six days, obtaining an assay of 90% to 95%.

Mr. J. Parres of Guanajuato states that the treatment by this system is done in 24 hours, of which 8 are dedicated to repassing the tortas.

This same gentleman says that in Fresnillo the Proaño ores are treated, that barely reach an assay value of 0.16 and that still it pays to treat same when employing the Ortega process.

Pachuca, the Capital of the State of Hidalgo, and a mining city *par excellence*, undoubtedly has today the largest number of metallurgical establishments, that through their importance and variety of systems employed, form a typical group of national metallurgy.

It was there, as already stated, that the patio process was invented; the Guadalupe Mill is to be found there of which we will speak later on, and finally, large Mills for treatment of ores by amalgamation are to be found there, as follows:

The following Mills treat ores by the common patio system:

LORETO, having 65 arrastras and Chili Mills.

PURISIMA GRANDE with 30 arrastras crushing 131⁸/₁₀ tons of ore in 24 hours, at a cost of \$4 per ton.

PURISIMA CHICA, LA LUZ & EL REFUGIO, where the ores are first concentrated and afterwards treated by said system; SAN JULIO, LA CONSTANCIA and others.

BARTOLOME DE MEDINA, having four Chili mills with the Mantey modification and which treats by the patio and barrel systems (J. M. Cesar).

In Pachuca treatment costs on an average \$10.08 per ton.

As before said, the Guadalupe Mill is the best one of this system in the Republic, and it is here where the patio system has all the modifications compatible with modern progress; this establishment will serve as a model to give an idea of how the ores are at present treated there.

It treats about 415 tons of ore per week, the metal contained in the patios represents a value of \$ 250,000.

In all the Departments electricity is used as motive power and as a proof of the success of this concern, it is enough to state that the shares which ten years ago were worth \$ 100 were quoted at \$ 1000 in 1890.

Herewith is the result of treatment in Guadalupe, as practised at present:

ORE TORTA 1153.

(Heap of ground ore for amalgamation).

SANTA GERTRUDIS ORES:

Fine ore (smalls) 172²¹¹ tons.
Coarse ore 103²²² „
Assay value ground ore . . . 1.529 silver.
Contents silver 423 kilog.

	Salt	Copper sulphate	Quicksilver
1896 April 1	13,807 kilog.	1,381 kilog.	. . . . .
„ „ 11 incorporation . . . . .	. . . . .	. . . . .	2,301 kilog.
„ „ 12	2,877 „	92 „	. . . . .
„ „ 15	0,575 „	35 „	. . . . .
„ „ 23	0,575 „	46 „	. . . . .
„ „ 24 incorporation . . . . .	. . . . .	. . . . .	1,082 „
„ „ 28	0,575 „	48 „	. . . . .
„ May 14 Bath . . . . .	. . . . .	. . . . .	847 „
„ „ 18 Sluices . . . . .	. . . . .	. . . . .	2,163 „
TOTALS	18,409 kilog.	1,602 kilog.	6,393 kilog.

In the 38 days of treatment, there was a consumption of:

Salt . . . 92 kilog. in 1,381 metric tons.
Sulphate . 8,054 „ in 1,381 „ „
Quicksilver used 1,483 kilog.
Amalgam from patio 1,483 kilog.
Filtered Quicksilver 4,712 „
Loss in patio 198 „

RETORT.

Amalgam from patio 1,483 kilog.
Crude silver dry torta 366 kilog.
Quicksilver 1,114 „
Loss in retort 3 „
Silver produced 367 „
Loss in per cent 13.2
Total Quicksilver loss 567 „
Quicksilver loss with relation to the amount of silver 157.7 %

The crushing of one ton of ore in this mill costs \$ 1.70 with wood and \$ 1.26 with charcoal.

BARRELS.

The system of treatment by amalgamation in barrels, is employed relatively on a small scale in Mexico. Herewith we give the most important plants using this system:

“La Union” mill in Pachuca, employing the Krönke system, having nine Chili mills and thirteen barrels, with an average capacity of 4½ tons using sub-chloride of copper as a reactive, produced by salt and sulphate of copper.

“Bartolome de Medina” mill, also in Pachuca, which employs the system invented by Engineer J. M. Cesar.

PANS.

The amalgamation system by pans, perfected by Mr. M. P. Boss, is generally used in the country, as can be seen by the following data:

Chihuahua. The Potrero Mining Co. (District of Jesus María) lately set up a Reduction Works using the pan system, it being worthy of note that the machinery composed of 20 stamps, was built by the Compañía Industrial de Chihuahua, and it being the first machinery for mines of such importance built in the country.

The “Santa Eduvigis” mill situated in the same mining camp as the former one, can treat from 60 to 100 tons of ore per day; and with the exception of the Candelaria concern in San Dimas, is the largest plant in the country, where Bryan crushing mills are used.

There are four of these mills which, as is known, are more perfect than the Chili ones and receive their movement direct by means of bands.

In the Candelaria Mill just mentioned, one sole attendant looks after the crushing machinery.

Durango. The "Compañía Restauradora del Mineral de Guanaceví", has a Reduction Works called "Arianaña", employing the common pan system. This Mill has 10 pans, 10 stamps and two calcination furnaces, all the machinery being built by the Compañía Industrial de Chihuahua.

Guanajuato. The Guanajuato Consolidated Mining & Milling Co. uses the continuous system of Mr. M. P. Boss, in its San Francisco Pastito Mill. We will mention this system further on, when we describe the Mill where it was first tried.

Guerrero. The "Garduño y Anexas" Co. has a Mill of 30 tons capacity per day, in which the process of Mr. Boss is used.

Hidalgo. The "San Francisco" Mill situated near the Sotol mine of the Maravillas Co. in Pachuca, was the first to use the system before mentioned on a large scale and with good results.

Mr. M. P. Boss directed the construction of said mill so as to apply his system on a large scale. His process is a modification of the pans.

It consists of a continuous series of eight or more pans. The ground ore on leaving the stamps enter the first pan, remaining a certain time in each one of those that form part of the series until it leaves them free of metal.

Once the treatment is started it is continuous, as the first pan is loaded at the same time that the last one is unloaded.

In the San Francisco Mill the first four pans grind and amalgamate and the four last ones only amalgamate.

This Mill has a capacity of 144 tons per week, the treatment costing \$8.96 per ton and the results have proved that the treatment of ores in Pachuca is advantageous with this system, even with ores having an assay value of 0.4 silver.

In the San Francisco Mill from 80 to 90 tons of ore per day are treated, their assay value varying from 0.5 to 0.9 silver, with a loss of quicksilver of one kilogram to 1.4 kilog. per ton, and yielding 70%.

The advantages of the Boss system with regard to the non-continuous amalgamation one, consist in economy of mechanical work, economy of quicksilver, of fuel and time, and obtaining a larger yield.

The "Progreso" Mill in Pachuca also uses in this system on a large scale.

This Mill has a capacity of 110 tons per day, treating ores with an assay value of 1 to 0.5 silver and a cost of \$10 per ton.

Sinaloa. In 1897 the "Santa Rosa" Mill was erected in Copala, using the common pan system, having 20 stamps and 30 modern concentrators.

Sonora. The "Amarillas" Mill, belonging to the Grand Central Mining Company has 30 stamps of 900 lbs. each; four grinding pans of the Boss system, six amalgamating pans, three precipitation tanks and 18 Frue concentrators; it has a capacity for 150 tons per day.

Tepic. The "Yesca Gold & Silver Mines" Co. Ltd., of London, has a Reduction Works in the mining camp of Yesca, that employs the common pan system.

Zacatecas. The "Bote" Co. has a Reduction Works using the Boss system, and a concentrating mill for treating the waste ore resulting from the above treatment. The "Mezquital del Oro" Co. has a metallurgical mill, consisting of 20 stamps of 50 lbs. each. It employs the system of copper amalgamating plates, the treatment costing \$1.50 per ton, 75% is lost in quicksilver from the fine gold collected.

The gold in bars contains .850 gold, .50 silver and 100 of copper. The residues assay 3 miligrams and by concentrations only 25% can be recovered of the gold contained. This Company treated from 1886 to 1894, 167,164 tons of ore, that produced 1914 kilograms of gold, with an average value of \$7.16 per ton.

LIXIVIATION. — There are many metallurgical establishments in Mexico treating ores by lixiviation, especially in the Northern and Western States of the Republic, the most important ones being the following:

Chihuahua. The Mill called "Hidalgo No 2" of the Hidalgo del Parral Mining Co. has a capacity of 80 tons per day and the silver bullion contains from 980 to 992 of silver. In 1892 20,837 kilograms of fine silver were obtained.

Durango. The "Guanacevi Mining Co." has a metallurgical establishment of 30 stamps, that treats ores by the Russell system set up in this mill in 1887, being in continuous use and having so far given very good results.

From comparative experiments, it appears that by the common lixiviation system, applied during one year, 70.5% of the ore was extracted and with the Russell system during the same time 87.6%

Oaxaca. The "Cia. de Venas auríferas de Oaxaca" owns a lixiviation mill in Taviches, Ocotlan, that has three ball mills, 12 lixiviating tanks and 6 chlorination furnaces.

The capacity of this mill is from 40 to 50 tons per day.

Sinaloa. The "Anglo-American Mining Co." mill in the mining camp of Yedras, near Badiraguato, treats ores by the Russell system.

This system is a variation of the ancient lixiviation one and consists in adding a certain amount of sulphate of copper to the solution of hiposulphite of soda.

As soon as this solution of hiposulphite acts, the extra Russell solution is made to act.

This mill has 16 tanks of 18 tons capacity each and 5 precipitation tanks.

As the Yedras ores are very rebellious in treatment, said Company which is one of the principal ones of the country, has carried out several very costly experiments of metallurgical treatment, which have resulted to the benefit of the miners in that locality.

Sonora. The "Quintero Mining Co." has established, besides its smelter, a special department for treating by lixiviation. This Department has 20 stamps.

Zacatecas. The "Sombrerete Mining Co." during a year, tried the Russell process with good results.

CHLORINATION. — The Mac Arthur-Forrest system for treating auriferous ore through cyanide of potash, awakened great interest in the country, as the cost of treatment by this system rarely exceeds \$ 5 per ton, generally being \$ 3. From the data, examinations and explorations carried out by the Gold & Silver Recovery Company, which was the first one to use this system in the country, it appears that: of 27 States forming the Mexican Confederation, there are precious metals in 24 of them and in at least 14 there are found auriferous ores; that in one State alone 17 places were discovered where there were abundant ores that would pay to treat, and lastly, that there are extensions of almost virgin auriferous ores, due to their being very rebellious to treatment.

Precisely with those rebellious ores, the said Company experimented with the Forrest system and obtained such satisfactory results.

The same Company affirms that the ores containing gold in a fine state of division are abundant, being intimately associated with copper and iron pyrites.

In the experiments made with fire in Real del Monte (Hidalgo) 92.84% of the gold contents were extracted.

The Government in view of said results and acceding to this Company's request, reduced the duties on introduction of cyanide and of zinc, which are the most necessary reactives for the use of this system.

The Pan-American Company that in Sonora uses the said system, in a mill of 100 tons capacity, has obtained very satisfactory results.

The Grand Central Mining Co. also employs same, with its rebellious ores from Las Prietas (Sonora). At this place there exists the largest mill in the Republic of those that use this system.

The Creston Colorado Mining Co. also uses this system, in the same locality — this Company extracts and treats 200 tons of ore per day.

CALCINATION. — The "La Cruz" Co. of Huitzuco, State of Guerrero, used at first to treat its mercurial ores by means of retorts and clay condensers, losing thus as much as 70% of quicksilver.

In view of this, continuous ovens were built, having brick chambers, reducing the loss to 50%.

Later on, continuous furnaces were built of greater perfection with only one series of condensing chambers and the quicksilver loss went down to 30%.

In the Gambetta furnace, with 58 tons capacity per week, the real loss is only 25% and in the new Progreso furnace having a capacity of 400 tons per week, and 26 condensing chambers, the loss is 15% more or less.

As the matrix of these ores is essentially limy, it may be said that the system of treatment is a mixture of calcination and reaction.

SMELTING. — From a few years back, the system of treatment by fire has, as before said, undergone a radical change, which is due greatly to the liberal laws decreed by the Federal Government for the development of Metallurgy and also to the concessions of the local Governments.

Amongst these, it appears to us convenient to quote a few, first observing that the Windom law, on imposing heavy taxes on the introduction of lead ores in to the United States, caused many American capitalists to seek investments in Mexico, the profits from which being greater than those of the neighboring Republic, also contributed to the development of Metallurgy in Mexico.

Among the local Governments that granted more franchises to industrial concerns, the first are Nuevo León, San Luis Potosí, Coahuila and Chihuahua.

That of Nuevo Leon granted very liberal concessions to several enterprises of a private nature for the establishment of smelters in Monterrey.

This same Government has made ample concessions to a Company called the "Cia. Fundidora de Hierro y Acero de Monterrey" which was formed in April 1899 with a capital of ten million dollars and which proposes to establish in the Capital of the State of Nuevo Leon a factory of iron and steel objects, and to work the Carrizal iron deposits in Nuevo Leon and those of Acatlan in Puebla; in a few days about five million dollars of the capital was subscribed.

This Government, also granted a concession to the Refining and Manufacturing Co. of Monterrey which in 1890 established a smelter in said City.

The Government of San Luis Potosí exempted the Mexican Smelting Co. formed in Newark, New Jersey, U. S. A. with a capital of \$400,000 gold, from the payment of local Taxes during ten years.

This Company has one of the most important smelters of America, near the Capital of the State.

In May 1897, the same Government extended its decree, exempting all smelting Companies from the payment of State and Municipal taxes during a term of ten years, who with a capital of \$10,000 should establish in the State, during five years counted from the date of the decree.

The Government of Coahuila granted ample franchises to the Kansas City Co. for the establishment

of a smelter in the Boquillas mining camp in the Sierra del Carmen; this smelter commenced work with a furnace capacity of 100 tons daily.

Those of Chihuahua and Coahuila together, subventioned the construction of a mining railroad from Escalon to Sierra Mojada, and from the date of this railroad, 130 kilometres long, we can trace the progress of this mining camp; furthermore the metals which were formerly exported to the United States are now sent to the San Luis Potosí smelter.

Lastly, that of Sonora, in December 1899, gave concessions to the Cananea Consolidated Company for the establishment of a smelter in Cananea, District of Arizpe, said Company obligating itself to invest \$300,000 in the mines and metallurgical works.

These concessions of the Federal Government and of the local ones, resulted practically in the establishment of large smelters, amongst which can be counted as foremost, the one in Aguascalientes, which we describe in a separate chapter, that of San Luis Potosí, Monterrey, Velardeña an others which we will briefly mention.

Chihuahua. «Magistral» smelter having modern water-jacket for the treatment of copper ores.

Smelter of Ciudad Juarez, belonging to the Juarez Concentrating & Smelting Co.; as already stated, it has also an establishment for concentrating. The smelting plant consists of six furnaces of 100 tons capacity each.

In the State of Chihuahua, there is also to be found near the Capital, an establishment for manufacturing iron and steel articles belonging to the Compañía Industrial de Chihuahua.

It is one of the most important of its kind in the country, having a smelter of iron and steel, and it has already manufactured complete machinery for working mines and smelters.

Durango. This State has several important smelters, the principal amongst which are those in the mining camp of Velardeña, that of Mapimi, the Iron Works of the National Iron and Steel Co. at the foot of the Mercado hill, near the City of Durango and the great smelter of copper ores of Hornillas, belonging to the «Descubridora Mining Co.»

Besides in Coneto, tin ores are treated in small cube furnaces made of uncut stone and cemented with clay.

The ores there treated carry from 3 to 10% tin.

We will briefly describe some of the most important smelters in Durango.

«La Velardeña» on an average treats 150 tons of ore daily. The first high furnace of the new plant commenced to work on the 21st of November 1898.

The Mapimi smelter belonging to the Peñoles Mining Co. has 10 water jacket furnaces with a capacity of 60 tons per day each.

It can be said that this Company produces more lead than any other in the country.

The following table will give an approximate idea of the works of this smelter:

Years	Tons of ore received	Kilog. silver	Kilog. gold	Tons lead
1894	14,223	9,049	104	2,070
1895	23,353	15,445	139	4,196
1896	37,699	28,865	251	7,050
1897	56,106	38,694	388	10,210
1898	69,151	44,087	396	12,287
1899	85,475	54,301	463	15,817

This smelter is managed by the intelligent German Engineer, Carl Riedt.

The Iron Works of Cerro del Mercado belong to the National Iron & Steel Co. a corporation formed by North American shareholders, owning 111 pertenencias or claims on the iron mountain; on the slopes of which the Works are situated.

The Mexican International R. R. has a branch to the entrance of the Smelter.

Hidalgo. In the State of Hidalgo at the points called «La Encarnacion» and «Apulco» there are two of the most important Iron Works in the country. Both belong to Mr. Richard D. Honey. In 1897 they smelted 1,264,216 kilogrammes of iron, representing a value of \$199,275.

The owner of these Works prefers to use coke coming from the Carboniferous Company of Coahuila, rather than any of the North-American cokes.

Jalisco. There is a Company here formed with large capital, for the purpose of working on a large scale, the iron deposits of «Providencia» near the City of Guzman.

There are two Iron Works, one called «Tula» and the other «Mata-Cristos.»

Their production in 1897 was 7,000 kilograms of iron, representing a value of one thousand Mexican dollars.

Mexico. The «Salto» Iron Works in 1897, smelted 714,285 kilograms of iron worth \$100,000 Mexican.

Michoacan. The «Anganguero» Co. has a smelter for lead ores that contain on an average 00.12 of silver, 28% iron, 34% sulphur, 2% lead, 7% zinc and 23% silica.

The average composition of slag corresponds to an iron mono-silicate; modern furnaces are used.

The mixtures are made with:

Calcined ore	24 to 36%
Slag	25 to 45%
Calcined iron	6 to 16%
Greta	5 to 8%
Coal	10 to 20%

When only coke is used 10% of it is employed and when coal 20%. The cost of smelting is \$8 per ton.

Nuevo Leon. In 1897 Monterrey, the Capital of the State of Nuevo Leon, had three large smelters, employing 1,196 laborers and producing:

Lead to the value of	\$ 2,138,771
Copper	29,265
Silver	14,164,483
Gold	1,079,803

• The rich lead which the Monterrey smelters produced in 1892 had an average assay of 6.9 silver. The average assay of ore smelted was more or less 12% lead and 1.4 silver.

Besides the large smelters of Monterrey, there are the smelters of «Benavides» and «Villaldama» in Nuevo Leon.

That of Benavides belongs to the Cerralvo Mining Co. treating lead ores, and managed by Mr. H. C. Harrison, who made a comparative study between the expenses which would have to be borne by two smelters of similar character, one set up in Mexico and the other in the United States.

From this examination it appears that in Mexico, 33% is economized in the smelters and that the working of mines in Cerralvo costs 17% less than it does in Colorado and 12% less than in Arizona.

The Villaldama smelter belongs to the «Guadalupe Mining Co.» and the cost there is \$4.88 to smelt each ton of ore. It is provisionally closed.

San Luis Potosi. Besides the smelter belonging to the Mexican Metallurgical Co. which is one of the most important and is situated at a short distance from the Capital of the State, there is another one in Matehuala. In this latter the «La Paz» ores are treated, containing on an average 30% of silica, 40% iron and 20% lime; besides the lead in this ore which produces scoria of excellent quality.

Sinaloa. In the Port of Mazatlan, there is an important foundry called «Loubet» where machinery is made for mines and industry in general.

Sonora. The Quintero Mining Co. has a foundry with a furnace of 40 tons capacity.

Tamaulipas. In the San José mining camp, the San Carlos Copper Co. has set up a smelter for cupro-auro-argentiferous ores. From 6,987 tons of ore smelted up to April 1899, the following average assays were obtained:

Gold	0.0056
Silver	0.033
Copper	5.57%

Mixture No 15 smelted in April 1899 was composed of:

Ore	1.228	metric tons
Gold	3.968	
being equal to	0.0032	
Silver	27.352	
equal to	0.0223	
Copper	69,634	kg.—5.7%
Iron	341,890	kg.
equal to	27.88	%
Lime	163,584	kg.
equal to	13.3	
Silica	36.5	

In 1801 the copper from Santo Domingo and Los Remedios was treated, and at a first was employed for making kettles which were sent to Mexico's Viceroy.

Copper ores were then treated with three fires, that is, they were reverberated, melted and made into ingots.

The old slag pots of the Spanish smelters, have given between 2% and 4% of copper.

GREAT CENTRAL SMELTER OF AGUASACALIENTES.

As this is one of the first of its kind in the Republic, and also one of the principal ones in America, it appears to us right to give a detailed description of said smelter.

Mr. Daniel Guggenheim obtained a concession from the Mexican Government for the establishment of three smeltets; two having a capacity of 300 tons daily and one of 100 tons daily.

According to this concession, the Great Central Smelter of Aguascalientes was established, construction being commenced on the 26th of June 1894, the first furnace commencing to work on the 24th of July 1895.

It consists of two principal departments, one for treating lead ores and the other for copper ores.

As soon as the ores arrive at the smelter, they are taken to their proper Department according to the classification that the Manager may make on receiving same.

The ores are sampled directly from the railroad cars the sample itself consisting usually of $\frac{1}{16}$ or $\frac{1}{20}$ of the whole, being taken to the sampling mill, the rest being distributed to the proper department i. e. the sulphides going directly to the roasting reverberatory furnaces, the oxidised ores being stored on the mixing beds from which, as occasion requires, they are drawn to be charged direct to the blast furnaces.

SAMPLING DEPARTMENT.—A new mill has lately been built, having two Blake crushers, two pairs of rolls moved by electricity, and one small grinding mill for pulverizing.

The cutting down of samples is done by hand as although the method is old it gives better results than all the mechanical ones so far experimented with.

ROASTING DEPARTMENT.—In connection with this there are two crushers, a pair of crushing rolls for fine crushing and four calcinating furnaces with a daily output capacity of twelve tons each.

Every two hours a charge of two tons of ore is made, and also drawn out, the roasting process itself occupying a period of 24 hours.

The reverberatory furnaces are fed with gas, produced by a mixture of coke and North American stone coal; use has also been made, although not with such good success, of a mixture of anthracite coal and coke.

The fine ore and fine dust, none of which can be advantageously charged to the blast furnaces in that condition, are mechanically pressed into briquettes, the machine used for the purpose being one patented by C. H. White and operated by an electric motor. The briquettes are about one kilogram in weight, circular in form and of about 10 centimetres in diameter by six centimetres thick.

In twelve hours, one of these machines produces 50 tons of material or 50,000 briquettes, which are dried under a roof, and in the open air if the weather permits.

DEPARTMENT FOR SMELTING LEAD ORES.—This consists of three large furnaces of 125 tons daily capacity and four small ones of 100 tons each.

As a flux iron ore from the Cerro del Mercado, is sometimes used.

Lime-stone is brought from a place near the Central Railroad line, on the Aguascalientes branch to San Luis Potosi.

The ores entering the blast furnaces contain at most from $2\frac{1}{2}$ to 3% sulphur.

The furnaces are sometimes in continuous operation without blowing out for as long a period as one year.

Three lead furnaces are constantly working, having four No. 6 Root blowers.

DEPARTMENT FOR SMELTING COPPER ORES.—The ores charged in these furnaces usually contain between 8 and 12% sulphur.

There are three furnaces of 160 tons daily capacity, and another one is being built which will smelt 200 tons per day, built by the Colorado Iron Works (United States).

The copper furnaces are charged every three hours, care being taken that the slag should have more or less a composition of:

Silica.	38%
Iron	22%
Lime.	22%

These furnaces work with very good results and the slag is practically always of about the same composition; there are five Root blowers No. 6 and one No. 7.

DEPARTMENT OF CONVERTERS.—These produce bars of copper, containing about 99% of metallic copper, power is supplied by a Corliss air compressor of 250 H. P. working at a pressure of twenty pounds per square inch. These converters are moved hydraulically, by means of a pump of 700 lbs. pressure per square inch.

There are two converters of the Bessemer system and each one can produce 100 bars of copper, weighing 100 kilograms each, in from three to six hours.

To line these converters, there is a mixture prepared in a chili mill of an argentiferous ore from Pachuca, containing a high percentage of silica, and of another ore, plastic in character, also from Pachuca.

MACHINERY.—To raise the ores to the charging floor of the blast furnaces from the mixing beds, which are located at a lower level, six elevators are employed, four operated by hydraulic power, and two by electric motors. The ore crushing department, the machine shop, as well as the briquetting, are all operated by electric motors.

The steam development department consists of seven boilers of 150 H. P. each, which supply steam for the converter, air compressor, and for the three Westinghouse engines operating the electric dynamos. The lighting of the plant is done by electricity, both arc and incandescent lights being employed.

FUEL.—Coke from Sabinas from the State of Coahuila is used to some extent. This contains more or less, from 18 to 20% ash. Pennsylvania coke is more largely used, this averaging more or less from 6 to 9%

ash. The latter coke is used more exclusively in the lead furnaces, although for the copper furnaces there is employed a mixture of the Sabinas and the Pennsylvania. Sabinas coal is also sometimes used under the boilers for steam making. This contains quite a large percentage of impurities, hence Pennsylvania coal, brought by sea to Tampico, is more extensively used for boiler service. Coal from Laredo, Texas, containing quite a high percentage of volatile matter and ash as well, is used to a considerable extent in the gas producers mixed with coke screenings and fines.

SLAG DISPOSITION.—Slag from some of the blast furnaces is disposed of by granulation, it being run direct from the furnaces into a flume in which there is running water, into which same flume runs water from the jackets of the blast furnaces, the balance being supplied by large pumps operating in the river close at hand. Slag from the other furnaces is removed by means of a small locomotive drawing slag pots on wheels.

Such in brief is a more or less accurate description of the several departments in this large smelter at Aguascalientes, and of the several operations carried on there.

In conclusion we will add that ores are shipped to this plant from long distances, originating as far away as from the States of Oaxaca, Sonora, Sinaloa, and Chihuahua, and copper ores and mattes being also imported from the United States, from Arizona and New Mexico.

The owners of this plant are also proprietors of a smelter and refinery at Perth Amboy in the State of New Jersey, near the City of New York.

Blister Copper and argentiferous lead bullion produced in the Aguascalientes plant are exported to the refinery in Perth Amboy, where separation of the gold, silver, and other metals takes place. Occasionally the Aguascalientes plant also export to the Perth Amboy refinery some lead and copper matter of a special character.

It is considered by some practical smelter men that the Aguascalientes plant is not very well located, for the reason that even though the river is near at hand, from which water supplies are obtained, the bed of same is some thirty feet below the level of the bank proper, which makes it necessary to pump a very large amount of water at considerable expense. An additional expense is also incurred as against a smelter located on a hill side by reason of the entire plant being built on level ground, which makes it necessary to use considerable power in handling of the ores from the ground to the height of the charging floor of the blast furnaces.

EXPERIMENTAL PLANT FOR TREATMENT AND SAMPLING OF ORES.

Besides all the metallurgical establishments and smelters mentioned, there is to be found near the City of Mexico, an unique establishment which merits special mention.

Its name heads this chapter and belongs to Messrs. Heckelmann & McCann. The object of this institution is to hinder the miners from establishing on a large scale any treatment systems of doubtful results; as frequently there have been cases in Mexico when the setting up of new processes not sufficiently experimented, have caused the ruin of mining concerns. In order to avoid in the future any such failures, this plant was set up, where large experimental tests of a practical nature are made, such as sampling, concentrating, etc., under the following different systems:

CALCINATION.

AMALGAMATION ON COPPER PLATES.

AMALGAMATION IN PANS AND CRUDE.

CHLORINATION AND AMALGAMATION IN PANS.

LIXIVIATION CRUDE.

CHLORINATION & LIXIVIATION.

CYANIDING, and

CHLORINATION OF GOLD ORES by the Plattner system.

This plant makes tests on ores from $\frac{1}{2}$ to 10 tons in amount, so as to ascertain the yield that may be obtained on treating the metal by any of the above systems, and thus know which is acceptable.

The proofs are carried out with the same machinery used by the large smelters and only varies in the number of machines. As can be seen, this plant is very important and besides the good services rendered already to Metallurgy here, it is hoped that it will continue rendering others of high importance.

SEPARATION.

The New Pinos Altos Mining Co. of Chihuahua, in July 1890 set up its electrical separation office employing the system patented by Bernardo Moebius. This is the first establishment of this kind in Mexico.

The apparatus used for this purpose consists of two poles, one formed by sheets of fine silver, submerged in a liquid containing diluted nitric acid and the other composed of thin sheets of the mixed silver bullion that are to be separated, and which, in sacks of thick unbleached muslin, are submerged also in said liquid.

Silver, in the shape of white metallic powder, is deposited on the sheets of fine silver, after having been dissolved by the acid; and gold, in a very fine black powder, is accumulated at the bottom of the sacks.

The silver resulting has an assay value of 995 to 999 while the gold is almost pure.

The capacity of this establishment is 115 kilograms of precious metals in 24 hours, with a cost not reaching 25 cts. per kilogram, including the patent dues.

SMELTERS

INTRODUCTION OF METALLIC AURO-ARGENTIFEROUS BULLION

To the Mints and federal assay offices

From the 1st of July 1889 to the 30th of June 1899

FISCAL YEARS	Patio (1) Kilograms	Barrel (1) Kilograms	Pans (1) Kilograms	Lixiviation (1) Kilograms	Fire (2) Kilograms
1899 to 1890	477,221	15,888	20,777	39,494	81,256
1890 to 1891	455,895	26,400	29,371	28,472	93,003
1891 to 1892	415,663	40,096	90,071	149,639	135,811
1892 to 1893	679,981	29,946	105,131	203,623	193,903
1893 to 1894	738,054	28,930	165,375	88,510	4,537,330
1894 to 1895	654,949	30,301	166,868	69,357	19,070,359
1895 to 1896	358,789	96,498	176,079	55,212	93,313,535
1896 to 1897	433,139	16,285	138,348	36,995	139,662,100
1897 to 1898	333,008	23,367	136,455	38,521	216,800,733
1898 to 1899	293,885	25,645	468,290	872,254	344,341,947
TOTALS.	4,940,584	333,356	1,497,765	1,582,077	828,229,977

NOTE: (1) In general they are mixed silvers more or less pure, which are obtained by the application of the metallurgical processes which are indicated.
(2) Auriferous silver and auro-argentiferous lead or copper.

Introduction of Metallic Auro-Argentiferous Bullion

to the Mints and federal assay offices

Systems of treatment	METALLIC BULLION			
	TONS.			
	Fiscal Year from 1889 to 1890	Fiscal Year from 1898 to 1899	DIFFERENCES	Ten Fiscal Years From 1889 to 1890 ut to 1898 to 1899
Patio (1) . . .	477	294	— 183	4,941
Barrels (1) . . .	16	26	+ 10	333
Pans (1)	21	468	+ 447	1,498
Lixiviation (1) .	39	872	+ 833	1,582
Fire (2)	81	344,342	+ 344,261	828,230

NOTES: (1) Auriferous silver more or less pure.
(2) Auriferous silver and auro-argentiferous lead or copper bullion.

SMELTERS IN MEXICO.

SYSTEMS EMPLOYED IN SAME.

— YEAR OF 1897 —

States and Territories	Number of smelters worked	BENEFIT SYSTEMS										
		Patio	Patio and Barrels	Patio and Pans	Patio and Lixiviation	Patio and Fire	Barrels	Pans	Lixiviation	Lixiviation and Pans	Lixiviation and Fire	Fire
Aguascalientes . . .	2.	.	.	.	.	.	.	.	.	.	.	2.
Lower California . .	9.	5.	.	.	.	.	.	1.	2.	.	.	1.
Coahuila	5.	.	.	.	.	.	.	.	.	.	.	5.
Chihuahua	41.	13.	.	.	.	1.	1.	10.	4.	2.	.	10.
Durango	35.	6.	.	.	3.	.	.	12.	4.	.	.	10.
Guanajuato	29.	27.	.	1.	.	.	.	.	.	.	.	1.
Guerrero	2.	.	.	.	.	.	.	.	.	.	.	2.
Hidalgo	34.	11.	.	2.	2.	.	2.	.	.	.	.	17.
Jalisco	12.	12.	.	.	.	.	.	.	.	.	.	.
México	11.	4.	.	.	.	.	2.	3.	1.	.	.	1.
Michoacán	3.	.	.	.	.	.	.	2.	.	.	.	1.
Morelos	1.	.	.	.	1.	.	.	.	.	.	.	.
Nuevo León	3.	.	.	.	.	.	.	.	.	.	.	3.
Oaxaca	7.	1.	2.	.	.	.	.	.	1.	.	.	3.
Puebla	2.	.	.	.	.	.	.	.	.	.	.	2.
Querétaro	3.	.	.	.	.	.	.	.	.	.	.	3.
San Luis Potosí. . .	8.	2.	1.	.	.	.	.	.	1.	.	.	4.
Sinaloa	15.	7.	.	.	.	.	.	5.	3.	.	.	.
Sonora	18.	3.	.	1.	.	.	.	5.	5.	1.	3.	.
Tamaulipas	2.	.	.	.	.	.	.	.	.	.	.	2.
Tepic	9.	4.	.	.	1.	.	.	.	4.	.	.	.
Zacatecas	32.	13.	.	.	.	.	1.	1.	7.	.	1.	9.
TOTALS . .	283.	108.	3.	4.	7.	1.	6.	39.	32.	3.	4.	76.

NOTE.—The preceeding data, although incomplete, gives a sufficiently approximate idea of the number and class of the smelting establishments at present worked in Mexico.

The number of workmen employed in the smelters in Mexico is estimated at more than 26,000.

PRINCIPAL SMELTERS IN MEXICO

COMPANIES	STATES	PERIODS	Ore Tons.	Gold Kgs.	Silver Kgs.	Lead Kgs.	Black Copper Tons.	Copper Matte Tons.	Pure Copper Approximate quantities Tons.	Coke Tons.	Workmen
Great Central Mexican Smelter (Guggenheim Smelting Company)	Aguascalientes	{ From the 24 of June 1895 to the 30th. of June 1899 . . . (Four years)	434,781 ⁽¹⁾	93	255,891	20,638	12,441	10	11	67,376	892
Boleo French Company, S. A.	Lower California. Santa Rosalia.	{ From the 1st. of January 1886 to the 30th. of June 1898 . . . (Eleven and a half years)	1,209,708 ⁽²⁾	.	.	.	24,608	80,857	76,500	.	.
Petoles Mining Company	Durango Mapimi.	{ From the 1st. of July 1889 to the 30th. of June 1899 . . . (Ten years)	286,006	1741	184,441	51,630	.	.	.	.	.
"Velardea Mining and Smelting Company"	Durango Cuencame.	{ From the 30th. of November 1893 to the 30th. of June 1898 (Four and a half years)	219,037	519	120,396	19,220	.	.	.	140,376 ⁽³⁾ 7,141	680
Mexican Smelting Company	San Luis Potosi.	{ From the 1st. of July 1894 to the 30th. of June 1897 . . . (Three years)	157,414	712	190,905	28,813	.	.	.	15,838 ⁽⁴⁾	706
Great Mexican National Smelting Company (Guggenheim Smelting Company)	Nuevo Leon Monterrey.	{ From the 1st. of July 1892 to the 30th. of June 1899 . . . (Seven years)	1,031,661	23	1,191,896	137,058	.	.	.	60,759	786
Mining, Smelting and Refining Company "Monterrey"	Nuevo Leon Monterrey.	{ From the 1st. of July 1892 to the 30th. of June 1896 . . . (Four years)	205,787	42	233,593	30,434	.	.	.	39,723 ⁽⁵⁾ 14,635	.

NOTE.—(1) Ores smelted in the year 1898 to 1899:

Silicious	34,438 Tons.
Ferruginous	31,922 "
Lead	30,455 "
Copper	44,634 "
Matte	7,097 "
	148,746 Tons.

- (2) The average assay of ore was 6.34% of Copper.
- (3) The amount of Coke consumed from the year 1897 to 1898 is not included. 7,141 Tons were Mexican Coke.
- (4) This data refers to the fiscal years of 1896 to 1897.
- (5) The amount of 14,635 represents Mexican Coke.

COINAGE

COINAGE IN MEXICO.

After the conquest of México by the Spaniards, the use of money was introduced in the country; it is well known that the ancient Mexicans in their mercantile transactions did not employ money; in acquiring objects of prime necessity or of luxury, they gave gold grain, contained in purses of duck's feathers, grains of cacao, small pieces of cotton cloth, copper, cut in the shape of a T and pieces of tin.

The first Spanish coin in the years following the Conquest, consisted of gold and silver spangles marked by the royal officials; but after the Establishment of the Mint in Mexico, by virtue of a royal decree dated on the 11th. of May 1535, coinage was started in 1537.

In regard to the shape of the coins, coinage under the long period comprised by Spanish rule, can be divided into three large divisions:

FIRST, from 1537 to 1771; coins without milled edges, of irregular shape and unequal weight, hammered, having a cross, two castles and two lions on one side and the name of the reigning sovereign on the other.

SECOND, from 1772 to 1771; Column coins of circular form, having on one side the Spanish arms between the two columns of Hercules, where the famous motto *«plus ultra»* was used.

THIRD, from 1772 to 1821; Bust coins, so-called because they had the Kings effigy on one side.

On the 28th of June 1542 the Vice-roy Antonio de Mendoza, authorized copper coinage, in pieces of 4 and 2 maravedis, but it was badly received and the coinage of same was stopped.

In 1814, the Vice-roy Félix María Calleja, ordered the coinage of «cuartillas» ($\frac{1}{4}$) «octavos» (tlacos or $\frac{1}{8}$ pieces) and «dieciseisavos (pilones or $\frac{1}{16}$ pieces) of a «real» (12 cents.)

The law of November 1867 decreed the adoption of the decimal system, and the ten and five cent pieces were made.

In 1883, Gen. Manuel González, being President of the Republic, nickel coins were introduced, consisting of 5, 2 and 1 cent pieces; but they were withdrawn from circulation because they were sent out in greater amounts than necessary and became very unpopular.

In January 1898 twenty cent silver pieces were coined.

In December 1899, the new copper coin was made, having 95% copper, 4% tin and 1% zinc, its size being between the 20 cent silver pieces and those of 10 cents, and its legal tender power only reaching the sum of 25 cents. This coin substituted the ancient copper ones which were going out because their intrinsic value became almost equal to their monetary value.

Coinage in Mexico is not limited as in other countries; but free and we might say obligatory, because the stamp and coinage dues are paid the same on precious metal bullion introduced in to the Mint to be coined, as well as those destined to be exported, and all metallurgical products such as sulphurets and silver cyanides, argentiferous lead and copper and also the ores in their natural state or concentrated and those that have been partly treated.

COINAGE in the Republic since the foundation of the Mints up to the 30th. of June 1899.

COLONNIAL PERIOD	GOLD	SILVER	COPPER	NICKEL
Coin without milled edges from 1537 to 1731.	8 497 950	752 067 457	200 000	
Column coins from 1732 to 1771	19 889 014	441 629 211	. . . . .
Bust coin from 1712 to 1821	40 391 447	888 563 989	342 893	
TOTALS	68 778 411	2,082 260 657	542 893	
INDEPENDENCE				
Imperial Bust of Iturbide from 1822 to 1823.	557 392	18 575 569		
Republican eagle, from 1824 to the 30th. of June 1899.	58 725 267	1,379 604 927	6 594 394	4 000 000
TOTALS	59 282 659	1,398 180 496	6 594 394	
RESUME				
Colonial Period, from 1537 to 1821	68 778 411	2,082 260 657	542 893	
Independence, from 1822 to 1899	59 282 659	1,398 180 496	6 594 394	4 000 000
TOTALS \$ 128 061 070 ⁽¹⁾		3,480 441 153 ⁽²⁾	7 137 287 ⁽²⁾	4 000 000 ⁽²⁾

NOTE: In the last period is included the amount of \$2,146.000 coins, engraved with the bust and arms of Maximilian; these coins were made in the year 1866.

- (1) Gold dollars, the legal value of a kilogram of gold being at present \$675.⁴¹⁶
(2) Silver dollars, the legal value of a kilogram of silver being at present \$40.⁹¹⁵

COINAGE IN ALL THE MINTS OF THE MEXICAN REPUBLIC

from the foundation of same up to the 30th. of June 1899.

MINTS	Founda- tion year	Gold	Silver	Copper	Nickel
Alamos (Sonora)	1868	570,392	21.610,413	1,745	. . . . .
Catorce (San Luis Potosí)	1865	. . . . .	1.321,545	. . . . .	. . . . .
Culiacan (Sinaloa)	1846	6.384,200	47.386,187	40,281	. . . . .
Chihuahua	1811	1.707,501	56.996,960	50,429	. . . . .
Durango	1811	3.573,104	71.297,582	1,785	. . . . .
Guadalajara (Jalisco)	1812	772,957	60.779,768	203,695	. . . . .
Guadalupe y Calvo (Chihuahua)	1840	2.311,104	2.063,958	. . . . .	. . . . .
Guanajuato	1812	21.639,505	300.559,026	14,664	. . . . .
Hermosillo (Sonora)	1867	1.837,602	16.896,365	79,060	. . . . .
México (Federal District)	1537	85.532,719	2 427.720,653	6.392,555	4,000,000
Oaxaca	1859	738,161	4.804,422	313	. . . . .
San Luis Potosí	1827	. . . . .	110.464,854	133,060	. . . . .
Sombrerete (Zacatecas)	1810	. . . . .	1.551,248	. . . . .	. . . . .
Tlalpam	1827	203,544	959,117	. . . . .	. . . . .
Zacatecas	1810	2.790,281	366.029,055	219,790	. . . . .
TOTALS . . . . .	. . .	128.061,070 ⁽¹⁾	3 480.441,153 ⁽²⁾	7.137,287 ⁽²⁾	4.000,000 ⁽²⁾

NOTE.—The Mint of Guanajuato was closed in 1813, and opened again in 1821. That of Sombrerete suspended work in 1811, began same in 1812, and was finally closed in 1813. That of Guadalupe y Calvo began work in 1814, and suspended same in 1850. That of Tlalpam was closed in 1830, when that city ceased to be the Capital of the State of Mexico. Those of Alamos, Chihuahua, Durango, Guadalajara, Hermosillo, Oaxaca, and San Luis Potosí were closed in 1895. At present only those of Culiacan, Guanajuato, Mexico and Zacatecas, exist.

- (1) Gold Dollars; the legal value of a kilogram of gold being at present \$ 675.⁴¹⁶
(2) Silver Dollars; the legal value of a kilogram of silver being at present \$ 40.⁹¹⁵

COINAGE OF THE MINTS OF THE REPUBLIC

from the 1st. of July 1889 to the 30th. of June 1899.

FISCAL YEARS	Gold	Silver	Copper
1889-90	243,298	24,323,727	134,632
1890-91	308,083	24,237,448	218,869
1891-92	291,940	25,526,717	156,694
1892-93	361,672	27,169,876	87,055
1893-94	553,978	30,185,591	. . . . .
1894-95	545,257	27,638,981	32,957
1895-96	565,786	22,634,788	36,525
1896-97	453,474	19,296,009	32,250
1897-98	459,219	21,427,057	31,600
1898-99	715,882	20,184,117	10,694
TOTAL	\$ 4,498,589 ⁽¹⁾	\$242,634,311 ⁽²⁾	\$ 741,276 ⁽³⁾

NOTE.—The copper money coined from the year 1889 to 1899, all came from the Mint of Mexico city.

(1) Gold Dollars; the legal value of a kilogsam of gold being at present \$ 675.⁴¹⁶

(2) Silver Dollars; the legal value of a kilogram of silver being at present \$ 40.⁹¹⁶

(3) Value in Silver Dollars.

MONEY AT PRESENT COINED IN MEXICO.

METAL	PIECES	WEIGHT		FINE		Alloy
		Grammes	Tolerance in Grammes	Thousands	Tolerance in Thousands	
GOLD . .	20 Dollars	32. ⁸⁴¹	0. ⁰⁷⁵	875.	2	Copper
	10 „	16. ⁹²⁰	0. ⁰⁵⁰	„	„	„
	5 „	8. ⁴⁶⁰	0. ⁰³⁸	„	„	„
	1 „	1. ⁶⁹²	0. ⁰²⁵	„	„	„
SILVER .	1 Dollar	27. ⁰⁷³	0. ¹⁰⁰	902. ⁷	3	Copper
	20 Cents	5. ⁴¹⁵	0. ⁰⁵⁰	„	„	„
	10 „	2. ⁷⁰⁷	0. ⁰⁵⁰	„	„	„
	5 „	1. ³⁵³	0. ⁰²⁵	„	„	„
BRONZE .	1 Cent	3. ⁰⁰⁰	0. ³⁰⁰	Copper 95% - Tin 4% - Zinc 1%		

NOTE.—More or less.

A cent represent the hundreth part of the value of a dollar.

The coinage of 20 cent pieces began in January 1898, and that of bronze in December 1899.

The old copper cent weighed 8 grammes, and contained no alloy of other metal.

PRECIOUS, SEMI-PRECIOUS AND ORNAMENTAL STONES

PRECIOUS, SEMI-PRECIOUS AND ORNAMENTAL STONES.

PRECIOUS.

DIAMONDS.—Persons of authority have affirmed that during the war of Independence, Gen. Vicente Guerrero, found samples of these precious stones at a certain place in the State, that at present bears his name; but up to this date, nothing has been proved as to the existence of diamond beds in this country.

RUBIES.—These are found at certain places in the State of Durango, but so far it is not certain whether they are rubies or garnets.

SAPHIRES.—Mr. G. F. Kunz affirms that he has found sapphires among chalcedony, jasper and agates, near San Gerónimo (Oaxaca.)

EMERALDS.—These are found in Tejupilco, State of Mexico.

None of the beds of precious stones just mentioned are being worked.

SEMI-PRECIOUS.

GARNETS.—In Chihuahua, near Lake Jaco; in Triunfo, Lower California among granite and slates; and in Sonora, there are found carbuncles of good quality and beautiful color.

In Xalostoc, State of Morelos, there is to be found a kind of garnet, having the color of a peach-blossom, that is remarkable for its coloring. It is found in crystals of $\frac{1}{4}$ to $\frac{1}{2}$ inches in diameter, preserving its color even when submitted to a very high temperature, and in its crystalizations shows rhomboidal dodecahedrons. These garnets were known ever since 1871 but the beds had not been located until 1888, when they were discovered by Mr. Niven.

In Xalostoc there are several classes of this garnet, from the very coarse ones up to the semi-precious ones.

TOPAZ.—In San Luis Potosi these are found in crystals from 1 to 3 inches in size.

In Coneto, Durango, they are found in abundance, associated with Durangite and Casiterite, presenting themselves in crystals of various colors, with a length of $\frac{6}{10}$ of an inch.

In La Paz, Guanajuato, there are also some topaz beds, these are in the form of large crystals without color, associated with tin ores.

TURQUOISE.—The Aztecs highly esteemed these stones and the Cerillos mines in New Mexico (United States) were extensively worked by them, before the discovery of America.

Pink turnaline and of various other colors, is found in the mountains of Lower California.

Remains of idols and other objets have been found of jade and jasper, worked by the Aztecs.

Obsidian, which plays such an important role in national archaeology, was very much used by the Aztecs and is found yet in large deposits in the «Las Navajas» hill, near Pachuca; as also in Michoacán, in Jalisco and in Querétaro.

They are abundant and of various colors, such as gold, silver, black, blue, green, red, etc.

Amethysts, chalcedonies, agates, jasper, essonytes, yolites, bichroites, beilos and jilopalos are found in several parts of the country, but no deposit of these stones is worked yet in the Republic.

OPALS.—These are the only stones which are worked in Mexico.

In 1802, a deposit was discovered in Zimapam, State of Hidalgo, containing opals of a fiery color, like a red hyacinth and a beautiful sample from this deposit was presented to the Philadelphia Exposition of 1876.

The deposits in the Hacienda of La Esperanza, Querétaro, were discovered in 1855, but up to 1870 no denouncements were made; they are at about 10 leagues from San Juan del Rio, and in 1855 in one sole piece of rock there were found precious, fire, harlequin and milky opals. There are also fire opals in San Nicolas del Oro and near Huitzuco in Guerrero, as well as to the North of San Luis Potosí.

In Guerrero there are some transparent opals streaked with red, blue and green. In Jalisco there are to be found some beautiful specimens of agate-opals, that present different tints and colors.

The common opal of Mexico is sold very cheap, as after a certain time it cracks and loses its color; even the very fine ones in the course of years are affected by the light.

In 1891 there were in Querétaro, Michoacán and Guerrero, some mines producing very hard opals, that kept during a long time without losing their color or hardness.

The clear opals of Querétaro are found in large quantities and seldom fetch high prices. The common ones are sold from three cents up and the fine ones from ten to one hundred dollars each.

In Querétaro there are three establishments where more than 50,000 opals are cut every year, in the most rudimentary manner, taking from two to three days for said operation.

Some of the Mexican opals present one sole strong color, red, green or yellow, and in that case they are superior to the Hungarian ones that never present this feature.

Mr. Ricardo Klein who owns the richest opal mines in the Republic, has taken out the most beautiful samples from his beds in the State of Guerrero which he exports. Said gentleman annually exports from ten to twelve thousand dollars worth of these stones.

Mr. G. F. Kunz states that in the Iris mine in Queretaro, a nodular mass of fire opal was found, of the size of a hen's egg, in a matrix of trachyte, iridescent and partly penetrated by yellow polished crystals; this sample is one of the finest in the world and there is no other like it in any of the collections so far known.

In Esperanza, Querétaro; Maravatío, Michoacán, and in Zimapán, Hidalgo, the opal is to be found in rhyolites.

A few years ago, according to a North-American journal, an explorer of opal beds found in Mexico a new stone, of a semi-precious character and which does not look like any of those known.

It was provisionally called "cyclops" and its discoverer sent twenty samples to jewelry stores in Chicago; it looks like an opal, having a hemispherical shape and on being cut, shows in its centre a small knot which appears to be the centre of a series of veins of a dark red color.

TECALI OR MEXICAN ONYX.

There is no marble or other similar stone that can compare in beauty with the so-called tecali found in several parts of Mexico. Before the Conquerors trod on Mexican ground, the native architects and artists had already selected that marble as their favorite material for their temples and sacred vases. The use of this stone was so strictly limited, that its present name is a corruption of the Aztec word "Teocali (House of God). The quarries mostly worked and known, are found in Puebla and Oaxaca, at the points called Tecali, Tehuacán, Etla, etc. The tecali produced by said quarries has called the attention of European and North-American merchants for several years. The classes most highly esteemed are those called pale green onyx, dark green onyx, dark green silvery onyx and ambarine onyx.

The high polish presented by this marble is obtained with oxide of tin powder.

The famous Pedrara variety of a rose color, is very scarce in the market; it figured at the Columbian Exposition of Chicago and attracted the attention of the whole world. This variety came from some quarries in Lower California, which were worked until a short time ago by the New Pedrara Company of New York and it appears they have been exhausted.

In the Exposition of 1900, Europe was shown a new variety of Mexican onyx coming from some quarries found in the States of Coahuila and Durango; those of Jimilco belong to Mr. Amador Cárdenas. Several artistical and ornamental objects have been made with the tecali from these quarries which were presented at the Exposition by Mr. A. Donamette.

As can be seen, the tecali or Mexican onyx has for some time been a source of industrial prosperity and will still continue to be so, for the States of Puebla and Oaxaca. When the onyx found in Coahuila and Durango becomes known in Europe, there is no doubt that these States also will derive from their tecali quarries large profits obtained from capitalists and industrial establishments.

In the Chapter dedicated to Mexico's Geology the formation of these deposits can be seen.



MINING CRONOLOGY

CRONOLOGY OF THE MINING INDUSTRY

AND OF THE MOST IMPORTANT EVENTS THAT HAVE BEEN RELATED TO IT IN MEXICO, SINCE THE CONQUEST,

1521 TO 1899.

- 1522.—Discovery of ore in Taxco, State of Guerrero. From this ore the first silver was obtained which the Conquerors sent to Spain.
- 1524.—The Pachuca mining camp began to be worked, in the State of Hidalgo, one of the richest in the country and at 100 kilometres from the Capital.
- 1540.—The Zacatecas silver mines began to be worked.
- 1548.—First discovery of silver in Guanajuato.
- 1555.—The silver mines of Sombrerete, Zacatecas, commenced to produce.
- 1557.—Invention of the patio system for treating ores, by Bartolomé de Medina, in Pachuca.
- 1632.—Discovery of silver mines in Batopilas, Chihuahua.
- 1666.—Discovery of silver mines in Cusihuiriachic, Chihuahua.
- 1704.—Discovery of the Santa Eulalia mines in Chihuahua.
- 1762.—Beginning of the great bonanza in Real del Monte, Hidalgo.
- 1773.—Charles III decrees the famous Mining Ordenances.
- 1778.—The mines of Catorce, San Luis Potosí, are opened and examined.
- 1783.—Zambrano discovers the famous silver mines of Cuarsamey, Durango.
- 1792.—The famous bonanza in Sombrerete, Zacatecas, is found.
- 1793.—For the first time in Mexico, mules and horses are used to mix slimes, quicksilver and other products in the patio system; men were formerly employed.
- 1798.—The great bonanza of the Ramos silver mines discovered.
- 1810.—Discovery of silver mines in Rufugio, Chihuahua.
- 1824.—Discovery of silver mines in Palmarejo, Chihuahua.
- 1824.—The Fresnillo silver mines in Zacatecas are opened.
- 1853.—Foundation of the Practical School of Mines in Fresnillo, Zacatecas.
- 1877.—Compressed air is applied for the first time in Catorce, San Luis Potosí, for the "Union Catorceña" Mining Co. and it was used to perforate the "Purísima Concepción" tunnel.
- 1878.—Discovery of silver placers in Sierra Mojada, Coahuila.
- 1880.—Discovery of coal beds in Sabinas, Coahuila.
- 1883.—Centennial of the foundation of the School of Mines.
- 1884.—Unification of Mining Legislation.
- 1887.—Restauration of mining works in Velardeña, Durango.
- 1888.—Construction of mining machinery in Chihuahua and Mazatlán for the first time.
- 1889.—Establishment of the large drainage pump in the "Dificultad" mine, Real del Monte, Hidalgo, it was built in Germany, has 900 H. P. and is of the Woolf system.
- 1889.—Discovery of the "El Concheño" mining camp of auriferous ores, in Chihuahua.
- 1890.—Mineralogical exposition in the Municipal Palace of Zacatecas, the expenses being for account of the local Government and all contingent coming from private parties. Every District of the State was represented.
- 1890.—The existence of anthracite in Sonora is proved by means of borings made with diamond drills.
- 1890.—Bonanza of "Cinco Señores," Pozos, Guanajuato.
- 1890.—The continuous pan system of M. P. Boss is applied on a large scale.
- 1890.—Industrial metallurgical smelting is established.
- 1891.—Appointment of the Geological Commission of Mexico.
- 1892.—Consolidation of mining property.
- 1893.—Setting up, in Santa Ana, San Luis Potosí, of the first electrical plant for working the mines.
- 1893.—Antimony commenced to be worked.

- 1893—The cupro-auriferous beds of Santa Fe, Pichuicalco, Chiapas, are opened.
1893—Restauration of the Mapimi, Durango, mining camp.
1893—Setting up of the wire nail factory in Monterey.
1895—The Mac-Arthur-Forrest cyaniding system is established.
1895—Rescision of private contracts for the lease of mints.
1895—Inundation of the Pachuca mines.
1897—Discovery of the "La Reina" mine near Cusihuiriac, Chihuahua.
1897—Restauration of works on a large scale in the copper mining camps of Inguarán, Michoacán.
1898—Restauration of works on a large scale in the copper mining camps of Tepezalá, Aguascalientes.
1899—Bonanza in "El Oro," State of Mexico.
1899—Making of the first contract for the establishment of a glycerine factory in Gómez-Palacios, Durango.
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LAW FOR THE ESTABLISHMENT OF ENTIRELY NEW INDUSTRIES

LAW FOR THE ESTABLISHMENT OF ENTIRELY NEW INDUSTRIES IN MEXICO.

In December 1898, the Executive of the Union enacted the decree which follows, and which grants special concessions to the enterprises investing their capital in the establishment of entirely new industries in the Republic.

The immediate result of this law, was the execution of several contracts, amongst which we will mention two of the most important ones, through their relation to mining.

1. Contract with Mr. Augusto Genin for establishing a fulminate factory in the Federal District.

2. Contract with the Compañía Jabonera de la Laguna, for setting up in Gómez-Palacio, Durango, a factory for the preparation and distillation of glycerine, employing in same the residues from soap making.

This same Company is about to establish a factory for explosives, whose principal ingredient will be nitro-glycerine.

DECREE.

Published in the "Diario Oficial"
of the 29th. of December, 1888.—
No. 156.

The President of the Republic has been pleased to address to me the following decree which reads:

Department of Fomento, Colonization and Industry of the Mexican Republic.—Section 2.

"PORFIRIO DIAZ, Constitutional President of the United States of Mexico, to its inhabitants, know ye:

That the Congress of the Union has seen fit to decree as follows:

The Congress of the United States of Mexico decrees:

Art 1. The Executive is authorized, during five years, counted from the date of the promulgation of the present law, to execute contracts granting franchises and concessions, without prejudice to third parties, to those Companies who may guarantee the investment of capital in the setting up and development of entirely new industries in the Republic, subject to the following bases:

I. The duration of said franchises and concessions will be for from five to ten years, according to the importance of the industry and of the capital invested in same.

II. The minimum of capital invested in the establishment and exploitation of the industry will not be less than one hundred thousand dollars and will correspond to the minimum of franchises.

III. Said capital will be exempt from all direct federal tax during the entire time of the duration of the contract.

IV. The concessionaires may import for one sole time, free of customs duties, all the machines, apparatus, utensils and construction materials necessary for the establishment of the industry and erection of buildings, with the previous accord of the Department of Fomento, and giving bond in each case of introduction of same, which will be cancelled as soon as the machinery has been set up, and the employment of the apparatus or material has been proved.

V. The same concessionaires will guarantee the fulfilment of their contracts with a deposit in bonds of the Public Debt, which will be determined by the Department of Fomento, and which will be made on signing the contract.

VI. The concessionaires will pay for the stamps corresponding to the contract on signing said document.

Art. 2. The importation privilege granted in this law, will be determined by the Departments of the Treasury and of Fomento.

Alfredo Chavero, President of the Deputies.—*G. Enríquez*, President of the Senate.—*Adalberto A. Esteva*, Secretary of Deputies.—*Mariano Bárcena*, Secretary of the Senate.

Therefore I order that it be printed, published, circulated and duly complied with.

Given in the Palace of the Executive of the Union in Mexico, on the 14 of December 1898.—*Porfirio Díaz*. To *C. Manuel Fernández Leal*, Secretary of State and of the Department of Fomento, Colonization & Industry.

And I communicate same to you for your knowledge and purposes.

Liberty and Constitution. Mexico, December 14th 1898.—*Fernández Leal*.

MINING LAW OF THE UNITED STATES OF MEXICO

DEPARTMENT OF STATE
DEVELOPMENT, COLONIZATION AND INDUSTRY
OF THE MEXICAN REPUBLIC.

SECTION THIRD.

The President of the Republic has been pleased to send me the following decree:

"PORFIRIO DIAZ, Constitutional President of the United States of Mexico, makes known to their inhabitants:

That the Congress of the Union has thought well to decree as follows:

The Congress of the United States of Mexico decrees:

MINING LAW OF THE UNITED STATES OF MEXICO.

SECTION I.

ABOUT MINES AND MINING PROPERTY.

Art. 1. Mining property in the United States of Mexico shall be governed by the following bases, which will be regulated by the Executive Government in accordance with its constitutional faculties.

Art. 2. Subject to the present law are those mineral substances which cannot be worked unless previous concession be obtained and those for whose extraction, work is required which may put in danger the lives of the workmen, the safety of the workings or the stability of the surface.

Art. 3. The mineral substances, for working which a previous concession is required under any circumstances, are those which are hereafter enumerated, whatever be the nature, shape or situation of their respective ore bodies.

A. Gold; platinum; silver; quicksilver; iron, except marsh ores, loose surface ores and ochres, which are worked as colouring matter; lead; copper; tin, except float tin; zinc; antimony; nickel; cobalt; manganese; bismuth and arsenic; be they found in native state or mineralized.

B. Precious stones, rock-salt and sulphur.

Art. 4. The owner of the ground can work freely, without necessity for a special concession in any case whatever, the following mineral substances:

The mineral combustibles; oils and mineral waters; the rocks of the ground in general, whether they serve directly or form part of materials for construction or ornamentation; the matter which forms the ground, as earths, sands and clays of all kinds; the mineral substances excepted from concession in Article 3 of this law, and, generally, all those that are not mentioned in the same.

Superficial or subterraneous excavations which the working of any of these substances may require, shall always be subject to the regulations which are decreed for order and security in the mines.

Art. 5. Legally acquired mining property and that which in future will be acquired in accordance with this law, shall be irrevocable and perpetual as long as the Federal property tax has been paid, in accordance with the regulations of the law by which said tax is established.

Art. 6. The newly acquired primordial mining title will be given by the Department of Development according to the regulations of this law.

Art. 7. Mining property, except in the case of placers and superficial ore bodies, is understood to be only underground and does not include the surface, which continues under the dominion of its owner, except that part of the same which the miner has to occupy in the cases and under the conditions mentioned in Art 11 of this section.

Art. 8. The taking out of produce from a mine is completely limited by the respective boundaries and only can these boundaries be passed in accordance with the provisions of the Regulations, when the ground is unoccupied and after previous request for the respective amplification of the concession.

In order to enter into another's field, the consent of the owner is absolutely necessary, except in cases of legal right of way.

Art. 9. The water brought to the surface and coming from subterraneous workings of mines belongs to the owners of the same and the regulations of the common law have to be observed in regard to the rights of owners of the ground through which these waters pass.

Art. 10. The work done for opening and utilising mines and placers is for public benefit, therefore, in case of non agreement forcible expropriation can be proceeded with for the ground necessary for this object.

Art. 11. The mining concessionist is free to make arrangements with the owners of the surface ground for the occupation of the surface he needs, in order either to work placers or superficial ore bodies or to es-

tabish buildings and other mining requirements, but in case both parties do not come to an agreement in regard to extent or price, the expropriation will be proceeded with through means of the local judge of first instance, the following proceedings being observed until Art. 27 of the constitution be regulated:

I. Each party shall name an appraising expert and both experts shall present their valuation within eight day's time counted from the day they received their appointment. If the appraisers do not agree, the judge will name a third expert as umpire, who shall give his decision within the peremptory time of eight days counted from appointment. The judge, taking into account the opinions of the experts, and the proofs which both parties present to him whilst the experts are preparing their statements, shall fix the superficial extent and the amount of the indemnity within the next eight days following. The decision of the judge shall be binding and against it there shall be no other recourse but that of responsibility.

II. In case the owner of the ground which needs to be occupied does not name his appraising expert within eight days after being notified by the judge, this functionary shall officially name an appraiser to represent the interest of the owner.

III. In case it be uncertain or doubtful who is the possessor or owner of the property which has to be occupied, the judge shall decide as amount of indemnity the sum resulting from the appraisements of the expert named by the concessionaire and of the one which he himself appointed in representation of the legitimate owner and shall make deposit of said amount in order that the same be delivered to the corresponding party.

IV. The experts in making their appraisements, shall base these on the value of the surface ground, the damage which immediately results to the property and the rights of way which are to be established on the same.

Art. 12. Mining property and other ordinary property bounding on it, shall, as the case may be, have the privilege of and be subject to legal right of way as regards free passage, conveyance of water, drainage and ventilation, and the judges shall conform in their decrees regarding the same and the corresponding indemnities, to the legislation of each State, Federal District or Territory, unless the same be modified by the following ruling.

I. The legal right of way of drainage consists: on the one hand, in the obligation which according to Art. 21 of this law the owner of a mining field is under, to indemnify the owner of another field for the damage done to him by not keeping up the drainage of the subterranean workings, or not draining sufficient to keep the water from flowing from one to the other; on the other hand, in the obligation which all owners of mining fields are under, to permit the passage through their ground of tunnels or adits whose exclusive and necessary object is the drainage of one or various workings.

II. The drainage tunnels, when not driven on the strength of the contract authorized by Art. 23 of this law, can only be undertaken by the owner or owners of mining fields to whom the tunnel is an absolute necessity.

III. In the case supposed by the foregoing clause, all the owners of mining fields which derive benefit from the drainage obtained through the tunnel, shall be obliged to pay their part of the indemnification, in proportion to the benefits received, taking into consideration the nature and the condition of the mine.

IV. The driving of a tunnel shall not be commenced without previous permission given by the Department of Development, after hearing the opinion of the respective mining agent and after examination and approbation of the drawings, in which the direction and the section of the projected tunnel shall be detailed.

V. The paying ore, found while driving the tunnel, shall belong, in case it is encountered in lawfully conceded mining fields, to the owners of these, and if found in unoccupied ground, it shall be divided amongst the owners of all the fields which are benefitted by the tunnel, in the proportion established by the foregoing clause III.

VI. If, when a tunnel is being driven, and one or more veins are discovered in unoccupied ground, a request be made for the grant of the respective fields or of the unoccupied surplus parts, then the orders of Articles 14 and 17 relative to this law shall be applied, considering those who undertook to drive the tunnel as explorers, in accordance with the final part of Art. 13.

VII. Once the permission mentioned in the foregoing clause IV being given by the Department of Development, only in virtue of a special contract can other persons but those who receive benefit from the tunnel be considered as members of the undertaking.

VIII. Whilst the tunnel is being driven in his or their respective properties, the owners of mining fields which are crossed by the drainage tunnel can appoint a controller in their confidence, whose functions shall only extend to watching the work and giving notice to the mining agent or the judge, as the case may require, of any abuse he may observe.

IX. In those places of the drainage tunnels, which, through whatever reason communicate with mine workings, bars shall be put up which impede roadway or passage, as soon as the communication is made.

X. Only in virtue of a unanimous understanding, expressed in a public document, between the parties interested in a general drainage tunnel in accordance with the foregoing clause III, can the tunnel be used for any other object but drainage. In this case, under penalty of nullity, all particulars regarding passage or transit, indicated in the foregoing clause IX, shall be stated in the contract.

XI. The mines newly opened in places where they may be benefited by general drainage tunnels already existing, will be subject to the provisions of clauses III, VII, VIII, IX and X.

XII. The legal right of way for ventilation consists in the obligation of every owner of mining field to permit that owners of neighboring fields communicate with his underground workings, so that the communication may produce, as a necessary result, the ventilation which could not be obtained in other ways except at great expense.

XIII. Unless by special contract to the contrary, made into a public document by the owners of the properties giving and receiving the benefit, there shall always be placed a barred grating to impede transi- or passage at the boundary line of the respective properties.

XIV. When a communication, different from the one described in clause XII, actually ventilates one or more workings, neither this service of producing ventilation shall give a right to the miner who made the communication, to exact indemnity from the owners of the other workings that have been ventilated, nor shall these on their side acquire a legal right of way which burdens the mining property which furnished the ventilation.

XV. If, while driving workings, opened for the purposes mentioned in clause XII, paying ore be found, the provisions suitable to the case of clauses V, VI and VIII shall be observed.

XVI. Also the provisions of clause IV shall be observed as far as they suit the case.

XVII. All the expenses occasioned by the workings which may have to be made in order to obtain ventilation and those for keeping them in future in good condition shall be exclusively for account of the party who requested the establishment of the right of way (of ventilation).

XVIII. For the establishment in future of a legal right of way to the benefit of one mining property, and to the burden of another, there shall be necessary: either the consent of the owner of the burdened property, stated in a public document, or in a declaration signed and ratified before the judicial authorities, or an administrative resolution agreed to by the interested parties, or a judicial decision.

XIX. The owner of mining fields, who wishes to acquire a legal right of way, which does not receive the consent of the party who considers himself burdened by the same, shall apply to the Department of Development which shall decide, within the space of time and with the formalities established by the Regulations, whatever it judges opportune, always hearing beforehand the dissenting party. In case either the latter or the petitioner do not agree to the administrative resolution, the right is reserved to them to apply to the respective local tribunals within the time specified by the Regulations. The decision shall be communicated by the tribunal which gives the same to the Department of Development.

XX. In case the administrative decision be favorable to the petitioner and adverse to the opposing party, it can only be acted upon immediately by the petitioner giving bonds, satisfactory to the Department of Development, for the indemnification of any damages, in case the opposing party receive judgment in his favor in the courts.

XXI. The ruling of the three preceeding clauses is applicable to all cases in which that which is ordered in the other clauses may give rise to judicial contests.

SECTION II.

ABOUT EXPLORATIONS, MINING FIELDS AND MINERAL CONCESSIONS.

Art. 13. Any inhabitant of the Republic can freely make, in government ground, exploration conducive to the discovery of mineral bodies, but if instead of borings, excavations should be made, these shall not exceed ten meters in extent, neither in length nor in depth. No licence shall be necessary for this work, but previous notice shall be given to the respective authorities, according to the provisions of the Regulations.

In ground of private property, no mining explorations can be made without the permission of the owner or his representative. In case, however, that this permission can not be obtained, it can be requested from the respective administrative authorities, who shall give the same in accordance with the provisions of the regulations, bonds being previously given by the explorer for the damage which may be caused, to the satisfaction of the authorities, after hearing the owner of the ground or his representative.

Inside of private buildings or their belongings, explorations can only be made with permission of the owner. No explorations shall be permitted inside the precincts of populated places, public works, public buildings or fortifications or in their neighborhood. The regulations shall fix in all these cases the minimum distance within which said works of investigation can be allowed.

During three month's time, which can not be prorogued, counted from the date of the notice of the permission or of the administrative resolution mentioned in this article, only the explorer shall have the right to receive mining fields.

Art. 14. The unit of concession, or the mining field (*pertenencia*) in future, shall be a solid block of unlimited depth, defined above ground by that part of the surface which in horizontal projection gives a square with sides 100 metres long and bounded under ground by the four vertical planes corresponding to the same.

This unit of mining field (*pertenencia*) is indivisible in all contracts made about mining concessions or which affect the ownership.

Art. 15. Except as regards the final disposition of Article 13 of this law, the concessions shall belong and shall always be given to the first applicant, and shall embrace in all cases in which there is sufficient free

ground, the number of mining fields which the interested party may ask for, but he shall clearly specify, in accordance with the dispositions of the Regulations, the situation which the fields, (*pertenencias*) which form his grant, occupy.

In case there remain between the mining fields granted and others already existing, a space less than the unit of mining grants, this space shall also correspond and be given in property to the first petitioner.

SECTION III.

ABOUT THE MODE OF ACQUIRING MINING CONCESSIONS.

Art. 16. The Department of State and of the Expedition of Development shall name in the States, Territories and in the Federal District, special agents in its service, before whom the applications for mining concessions shall be presented. These agents are authorized to collect fees according to the tariff to be fixed by the Department mentioned.

Art. 17. The agents of the Department of Development shall receive the applications for mining concessions and shall note down immediately on the Register the day and hour of presentation. They shall thereupon proceed with the publication of the application and the measurement of the fields (*pertenencias*) by the expert, or the practical man, whom they shall appoint and in case there be no opposition, they shall send a copy of the proceedings and of the map to the Department of Development for the corresponding approbation and the issuing of the titles.

The Regulations shall fix the time within which these acts have to take place, and shall detail the mode of procedure of the agents.

Art. 18. The approbation of the proceedings being obtained, and the title to the property having been given in favor of the *consecionaire*, the latter enters into possession of the mining fields without further formality.

Art. 19. The agents of the Department cannot suspend the proceedings for any reason whatever, unless there be opposition. When once the time has expired which is fixed by the Regulations, they shall be obliged immediately to send the protocol of the proceedings, in whatever condition it may be, to the Department of Development, so that after examination it declare the tardy applicant rejected, should the fault be his, or hold the agent responsible, if through him the case has been delayed. The tardy applicant can not again petition for the same concession.

Art. 20. When opposition is made by the owner of the surface ground to the request for any mining concession or to the making of the respective measurements, and he claims that the ore deposit does not exist, then if there be found indication of a deposit on the surface, or any excavation or workings of exploration in the deposit itself, the Agent of the Department of Development shall reject the opposition. In case that no indications of any orebody exist on the surface of the ground and there be no excavations or workings on the same, then a proceeding analogous to Article 11 of this law shall be followed, the respective judge deciding whether or not the concession shall be granted. His decision can be appealed against in both cases. The decree shall be communicated to the Department of Development.

Art. 21. The agents of the Department of Development shall suspend proceedings in case there be opposition and shall send the protocol to the judge of 1st. Instance of the respective place for the legal decision of the corresponding judgment. The judicial authorities shall advise the Department of Development of their decision.

SECTION IV.

GENERAL DISPOSITIONS.

Art. 22. The working of mineral substances, whether they belong to those that are acquired through a concession, according to this law, or to those that belong to the owner of the surface, shall be subject to all the dispositions which the provisions of this law may dictate in regard to police regulations and the security of the workings themselves, but if the owners conform to the Regulations, they will on the other hand have complete liberty of industrial action, to work in the way that suits them best, to hurry, delay, or suspend for more or less time their work, to employ the number of workmen they wish and wherever it suits them best, and finally to follow whatever system they prefer as regards workings, extraction, drainage or ventilation, they consider most suitable to their own interests. The owners however remain responsible for the accidents which happen in the mines on account of their being worked badly and for damages occasioned to other properties by reason of not taking out water, or any other circumstance which may impair the interests of others.

Art. 23. When in order to hurry the work in the mines of a locality the necessity arises for making drainage tunnels, the execution of these workings shall be a matter of contract between the interested parties.

Art. 24. The partnerships or companies formed for working mines shall be governed by the disposition of the Commercial code, except as regards Associations which are not admissible in mining matters.

Art. 25. The contracts for furnishing money to the miner, known as *«avio»*, shall in future have the character either of partnership, in which case the provision of the foregoing article shall be observed, or mortgage. The mortgage, in mining matters, can be freely given in accordance with the Regulations of the Civil Code of the Federal District, but the indivisibility of the mining field (*pertenencias*), established in Article 14 of this law, shall be taken into account and the regulations of the Commercial Code as regards the

Register shall be observed, and for this purpose a special book of mining operations shall be opened. The holder of the mortgage shall always have the right to pay the tax mentioned in Article 5 of this law and shall through this payment acquire a right of preference over the owner of the mine in regard to his own mortgage.

Art. 26. The mortgage may be divided into mortgage bonds to name or to bearer, either in the titles which constitute the debt or by a later document. In every case it shall contain the dispositions organising the social representation of the holders of the bonds. These dispositions, and also those relating to the amount of the debt, to the conditions of the same and to the guarantee, shall appear in print on each of the mortgage bonds.

The holders of the mortgage bonds can only take action against the debtor or the mortgaged property through their common representative, whose acts as regards their rights shall be obligatory on all the holders.

Art. 27. The trials by court in mining matters, shall take place and be decided in the Federal District and territories and in each State before the judges and tribunals which there are competent according to the Regulations of the Commercial Code and also shall be observed that which is prescribed in Chapter 9th, Title 1st., Book 4th. of said Mercantile Code, based on this, that the first expense of the administration indicated in the second clause of article 1,030 of the same Code, is the payment of the tax.

Art. 28. The new tax which shall be paid by all mining concessions, with the exception of those which are expressly exempt by contract shall be a Federal tax on the property and shall be established by the respective special law. As regards the other taxes on mining, the disposition of the law of June 6, 1887 shall be observed.

Art. 29. Default of payment of the property tax, levied in accordance with the regulations and procedure of the law which establishes the same, shall constitute, from the date this present law goes into force, the only reason for forfeiture of mining property, which in this case remains free of all burden and shall be conceded to the first applicant, in accordance with the provisions of this law and its regulations.

Art. 30. The industrial branch of mining shall belong to the Department of State and of the Expedition of Development, Colonization and Industry, which therefore can dictate, in accordance with the regulations of this law, all the measures it judges necessary for the promotion of the prosperity of the mining industry and which shall watch that the said law be enforced. It shall name the inspecting mining engineers it may think necessary, to visit the workings of mines or mineral substances, to study the same, to make investigations and to fulfill in general whatever commissions the Department may give them, in accordance with the details prescribed by the Regulations.

Art. 31. The Executive Government shall fix, according to the terms of article 21 of the Federal Constitution, the Government punishment which those incur who infringe the dispositions of the Regulations which it issues for the enactment of this law.

The official transgressions committed in the mines remain subject to the corresponding territorial judges, this, however, shall not interfere with the governmental punishment, should the administrative Federal Authorities impose same.

Art. 32. The establishment and working of mills and all kinds of metallurgical works shall be guided by the regulations of the common law, and as regards taxes, by those of the law of June 1887.

Art. 33. There remain exempt from taxes that part of the tunnels situated outside of properties, when these are destined exclusively for the ventilating, draining and extracting of minerals that do not proceed from the said tunnels.

SECTION V.

TRANSITORY PROVISIONS.

Art. 1. The denouncements of mines or surplus ground (demacias,) which are in procedure when this law goes into force, shall be continued and substantiated and shall be decided according to the provisions of the same.

Art. 2. The surplus ground or open spaces existing between neighbouring mining properties and which have not been denounced when this law takes effect shall correspond and shall be given to the first party who applies for the same.

Art. 3. The contracts for the exploration and working of mining zones made with the Department of State and Expedition of Development, Colonization and Industry, which are in force when this law takes effect and in virtue of which the concessionaires are complying with the respective stipulations, shall remain in force for the whole time of their duration, if the concessionaires so desire. The concessionaire can, however, within a year's time counted from the date this law goes into force, choose the provisions of the new law, and as soon as he makes declaration to this effect before the Department he shall be relieved by the same from the obligations which said contracts imposed on him and shall receive again the corresponding deposit. Remaining subject to this law and its regulations only, he shall acquire and conserve perpetually his mining concessions as long as payment is made of the federal property tax.

Art. 4. Existing mining properties which are being worked or are held by special permit (amparo) when this law goes into force, notwithstanding that they are not in accordance with the same, shall remain in subsistence and the mines shall retain their fields with whatever measure they may have, though these be different from those now established.

As regards the tax, however, the unit mentioned in Article 16 of this law shall serve as a basis.

The owners, however, can ask for a rectification of the concession and for a new property title.

Art. 5. The contracts for furnishing money to the miner ("avío") and all those relating to mining business, which are in existence when this law takes effect, shall be governed by their respective stipulations, and as regards points which may have been omitted by the mining law which was in force at the time these contracts were made; but it shall be indispensable to the validity of the future operations which have their origin in these contracts, that these be registered according to the dispositions of Articles 24 and 25 of this law, within a year's time counted from the date it takes effect.

Therefore, whenever a mining business is transferred, under whatever pretext to a third owner, the latter shall be responsible for the obligations resulting from said contracts, supposing that any question in court should arise from the same.

Art. 6. The work which is being done in the mining field (pertenencia) of another owner in accordance with the law still in force, cannot be prosecuted after the date on which the present law takes effect unless it have the consent of the owner of this field.

FINAL PROVISION.

Only Article. This law will go into force in the whole Republic on July 1st 1892; and from that date the mining code of Nov. 22 1884 and the circular orders and provisions relating to the same shall be abolished.

Art. 10 of the law of June 6 of 1887 shall also be abolished from the date of the promulgation of this law.—*Alfredo Chavero*, Presidente of the House of Representatives.—*V. de Castañeda y Nájera*, President of the Senate.—*José M. Gamboa*, Secretary of the House of Representatives.—*Mariano Bárcena*, Secretary of the Senate.

"Therefore, I order that the same be printed, published, circulated, and given full compliance.

" Given in the palace of the Executive Government of the Union, in Mexico, on the 4th day of June "1892.—*Porfirio Díaz*.—To citizen Manuel Fernández Leal, Secretary of State, and Expedition of Development, Colonization and Industry."

And I communicate the same to you for your knowledge and subsequent results.

Liberty and Constitution. Mexico, June 4th, 1892.

M. Fernandez Leal.

To

MINING REGULATIONS

Department of Development, Colonization and Industry, of the Mexican Republic.—Section 3rd.

The President of the Republic has been pleased to address me the following decree:

"*PORFIRIO DIAZ, Constitutional President of the United States of Mexico, to the inhabitants thereof, be it known:*

That by virtue of the constitutional faculty vested in the Executive, and in conformity with article 1st, of the law of June 4th of the present year, I have seen fit to decree the following:

REGULATIONS FOR ADMINISTRATIVE PROCEEDINGS REGARDING MINING.

CHAPTER I.

OF AGENTS.

Art. 1. The special agents, dependent on the Department of Public Works, and appointed by said Department, wherever judged necessary according to Article 16th of the Law, for any Mining District, shall receive and transmit all petitions for mining concessions and extensions presented to them and shall exercise all the other functions marked out by the law and its regulations.

In the event of any doubt on the proper application of the law, the Agent shall consult the Department of Public Works.

Art. 2. At the time of making the appointment the jurisdiction of each Agent shall be clearly defined, and the same, as well as any ulterior amendment thereof, published in the *Diario Oficial*, the Government official organ.

Art. 3. The following requirements must be complied with in order to fill the position of Agent of the Department, viz: The applicant must be a Mexican citizen, in the possession of his legal rights, and he must fill no other Government position in the State, Territory or Federal District.

Art. 4. With each Agent appointed at the Several Mining Districts, a number of substitutes shall be designated in proportion to the magnitude of business developed in that District.

These substitutes must possess the same qualifications as the Agents themselves, and will represent the latter during any temporary or permanent absence, as well as all occasions where legal impediment may occur, the substitute being previously called upon by the respective Agents.

Art. 5. Legal impediments in the way of Agents shall be considered all such as for the magistrates are set forth in sections I to IX and XII of Article 1,132 of the Commercial Code.

Art. 6. In case of death or serious illness preventing the Agent from notifying his substitute, the latter shall enter into the former's functions without loss of time, giving the Department due notice thereof through the mail, or by telegraph where such exist.

Art. 7. The Mining Agents shall give the public due notice as to their place of business, and hours devoted thereto which business shall not be interrupted except on Sundays and National holidays.

Art. 8. The Agents shall receive no other fees for their services than those set forth by the respective tariff, and in any case not specified therein they shall consult with the Department as to the amount to be charged.

Art. 9. During the first ten days of each month the Agent must forward to the Department of Public Works a detailed Report of all petitions for Mining Concessions, presented to him during the previous month.

CHAPTER II.

OF EXPLORATIONS.

Art. 10. Each and every inhabitant of the Republic shall have the right to carry on mineral explorations on any section of National lands, due notice thereof being given the Agent at the respective Zone, as prescribed by law. The notification must be tendered in duplicate, specifying therein the limits of the Zone to be explored.

The Agent shall return the exploring party a copy of said notification, specifying thereon the date and hour it was presented and warning the same that in the event of any digging effected, this should be done strictly in conformity with article 13 of the Law, and 14 of the Regulations.

Art. 11. If the explorations are to be made on private property the exploring party should first obtain due permission from the owner of the property, or his attorney, who, if authorizing it, will give the explorer a written statement specifying thereon the limits of the ground to be explored. This statement must be presented to the respective Agent, who, after making the proper entry in the Record, shall return it to the exploring party, expressing the date and hour when presented.

Art. 12. If the owner of the property or his representative should fail to grant the permission called for, the exploring party should apply to the Agent for same, stating at the same time his security therefor. This petition shall be presented by the Agent to the owner of the property, who failing to protest within a fortnight, shall be understood to grant his consent. At the expiration of the aforesaid fifteen days, the Agent shall adopt the proper proceedings, fixing at the same time the amount of security which must be produced by the exploring party and a term of 30 days for presenting the same. The security once produced the Agent shall give the explorer a written acknowledgement, expressing thereon the limits of the section to be explored.

Art. 13. During a term of three months, not to be prorogued, from the date of the notification, permission or Administrative proceedings referred to in Articles 10, 11 and 12 of these Regulations, the Agent shall admit of no other petition for the site of explorations or the limits thereof, than those proceeding from the exploring party.

Art. 14. The exploring party or parties shall not carry on the work of exploration at any distance from towns or inhabited places, nearer than fifty meters from the exterior boundaries of public and private buildings and outhouses belonging thereto. The same distance shall be observed with regard to any public edifice or construction of any kind, but this shall be reduced to 30 meters from the lines bordering highways. Railroads and Canals. With regard to fortified places, no work of exploration shall be carried on within one kilometer reckoned from the outer lines of same.

CHAPTER III.

ON CONCESSIONS.

Art. 15. The petitions for concession of claims or extensions must be presented in duplicate to the respective Agent. These petitions shall clearly express the number of claims wanted, their situation on the ground and the relative position of said ground with regard to the corresponding Municipality, fixing the most notable points of the locality for identification, and specifying at the same time the mineral substance to be developed. Should the Agent judge the petition as lacking clearness and accuracy on any point, he shall have the right to question the petitioner in order to obtain the same. All such information being affixed to the duplicate petition and Record of the Agency, in the presence of said petitioner. Ignorance or inability on the part of the petitioner to afford the desired information shall be no obstacle in the way of registering the petition, or sufficient cause for suspending the proceeding.

Art. 16. The Agent shall admit no other petition for the same site until the Department of Public Works has given its final decision on the provision for each petition.

Art. 17. On presentation of a petition to the Agent, this functionary shall proceed to register the same in the presence of the petitioner stating on the margin of both petition and duplicate thereof, as well as in the official Register duly authorized by the Department, the date, hour and numerical order of presentation. The petitions must be registered strictly in the order of dates and hour of day presented, leaving no space in blank between the inscriptions.

Art. 18. In the event of two or more petitions for claims or extensions on the same site being presented at the same time the decision shall be cast by lots.

Art. 19. Within three days following the presentation of a petition for concession of mining claims, the Agent shall appoint a titled expert, or, if such is not be found, a practical surveyor to take the measurements and draw the plans of the claims and extensions solicited, expressing clearly thereon the monuments marking said claims as well as those of all other claims within an area of 100 meters all around. The Agent may appoint the surveyor suggested by the petitioner provided said surveyor meet all the requirement prescribed by law.

Art. 20. Within the next eight days following the appointment referred to in the foregoing article, the surveyor must communicate with the respective agent stating whether he accepts the appointment or otherwise. If he accepts, he should also state that arrangements had been concluded between himself and the petitioner, as to the amount of fees to be collected. The Agent shall thereupon make the proper entry in the respective provision.

At the request of the petitioner the Agent may extend, on one single occasion the aforesaid period of eight days, to another eight.

Art. 21. On making the entry referred to in the foregoing article, the Agent shall fix a period not exceeding sixty days for the presentation of drawings referred to in Article 19 accompanied by an explanatory report, by the surveyor; the Agent shall then proceed to draw up an extract in duplicate containing the following data:

I. The petition, specifying in a clear and precise manner the name and dwelling of the petitioner, and the numerical order of the corresponding title.

II. The name, residence and acceptance of the surveyor appointed.

III. Due notice that within a period not to exceed four months from the date of said extract, the corresponding title shall be finally substantiated at the respective agency.

A copy of the Note shall be published in the bulletins fixed on the exterior of each agency, the petitioner furnishing the revenue stamps necessary for said publication. The notice shall remain on the bulletin boards for a period of one month, due entry thereof being made in the corresponding title.

Another copy of the notice shall be handed the petitioner, who, at his hown expense and risk, an within forty days after the date of said notice, shall have the same published three consecutive days in the official paper of the respective State, Territory or Federal District, copies of which issues must be delivered at the agency by the petitioner, in order to have the same attached to the corresponding title.

Art. 22. The publication of the notice, as stated in the previous article, shall serve as summons to all such as may deem themselves justified in protesting against the concession of the petition in question.

Art. 23. On making the entry referred to in Article 20, the Agent shall hand the expert a certified copy of his appointment, which must close with warning that whosoever may resist or oppose the execution of any work undertaken by the Expert, shall make himself liable to the penalties established in Article 904 of the Penal Code of the Federal District, or the law of the respective State.

Art. 24. Should the experts meet any opposition or positive resistance in the execution of the previous article, they may call the local authorities to their assistance.

Art. 25. The Expert shall pay due attention to all remarks offered by the petitioner as well as by those who have opposed or may oppose the petition; but they shall reserve their views on the sujet for the written report referred to in Article 21, the presentation of which, within the period therein stipulated, shall be for the sole account and responsibility of said Surveyor, as well as all damages that may spring from the non-delivery of said Reports and Maps.

Art. 26. Opposition to the concession of a petition for any of the following reasons, shall only be admitted during the four months stipulated in clause III of Article 21, viz:

I. By the dissent of the property owner.

II. By the invasion or trespass on adjacent claims or extension.

III. By prior rights or petition of the claims or extension solicited.

Art. 27. On receipt of a protest to any petition, the Agent shall notify the petitioner by means of a written notice placed on the bulletin boards during three consecutive days, expressing thereon the names of the claimant and opponent respectively, as well as the numerical order of the corresponding title wherein due entry shall be made of said publication.

Art. 28. Save in the event of the petitioner notifying the Agent that he desists from his claim, the latter shall have the opponent's protest preserved on file until the Surveyor's Report and plans are presented.

Art. 29. On presentation of these documents the Agent shall proceed to call a meeting of the parties, to take place within the next fifteen days, publishing said summons on the Agency bulletins during three consecutive days, and expressing the numbers of the provision, names of the parties, and date and time of day appointed for the meeting. At this meeting it shall be the Agent's mission to bring about a compromise between the dissenting parties, in order to avoid legal complications. Of all the particulars due entry shall be made in the respective provision.

Art. 30. If the opposition should spring from the land owner, and the Expert's Report should point to indications of mineral deposits on the surface, or any explorations in said deposits, the Agent shall carry the Administrative proceedings on the provision to a conclusion, so that the Department may issue the proper title in favor of the petitioner, since this, according to Arts. 7 and 11 of the Laws is either simply accountable

for the underground operated upon, or otherwise leave to the jurisdiction of the courts the extension and appraisements of the surface occupied by the miner. At the conclusion of these proceedings, which shall be duly placed on record, the Agent shall notify the parties that they are at liberty to have recourse to the usual tribunals, according to Article 20 of the Law.

Art. 31. In any other of the opposition cases enumerated in Article 26, should the Agent be unsuccessful in bringing the parties to a compromise, he shall at once suspend all further proceedings and deliver the respective provision to the petitioner, who, on his own responsibility and within reasonable term appointed by the Agency, must present it before the corresponding local Judge of First Instance.

Art. 32. If any reasonable opposition, based on causes not provided for in Article 26 should be produced, the Agent shall simply affix the same to the corresponding provision, without suspending the proceedings on this account.

Art. 33. In the event of any opposition being made after delivery of the Surveyor's maps and Report, but before the expiration of the four months stipulated in clause III of Article 21, the proceedings referred to in Article 29 to 32 shall be continued without interruption. This being the only instance, (aside from the remission to the Tribunals) where the agent may delay the substantiation of the provisions for 35 days after the said four months, provided the opposition be made within 20 days of the expiration of the above mentioned four months.

Art. 34. If the four months referred to in Article 26 should have passed without any opposition being made, or in the event referred to in Arts. 30 and 32; or should the provision returned by the Tribunals with a judgement in favor of the petitioner, the Agent is strictly enjoined to forward to the Department of Public Works, within the next fifteen days following, and under registered cover, copies of the provision and maps, unless the petitioner should undertake to be the bearer of those documents, in which case the Agency shall give due notice thereof to the Department.

Art. 35. The petitioner shall furnish the Agency with the amount of Revenue stamps required for issuing the title. These stamps shall accompany the copies of provision and maps forwarded to the Department under registered cover, and will be returned, through the Agent, to the petitioner, if the Department should disapprove the provision and consequently refuse the title. If the petitioner should so desire he may appoint the party who must deliver the stamps at the Department.

Art. 36. Any omission or neglect in presenting the petitions, furnishing the stamps, or printed notices, payment of fees, or non appearance at the meetings, and in general, of any requirement mentioned in this chapter, imputable to the claimant or the opponent respectively, shall imply, on the part of the former, the relinquishing of all claims and his petition, and on the latter that he desists from his opposition, and consequently acknowledges the legality of the petition's claims.

Art. 37. After due consideration and approval of the provision by the Department, the proper title shall be issued and forwarded to the Agent, who must deliver the same to the petitioner with a copy of the maps duly stamped by the Department of Public Works; this Department furnishing that of Finance with a detailed report on the concessions granted.

Should the provision meet the disapproval of the Department, the Agent shall be notified thereof in order that any errors or deficiencies may be rectified, within the term appointed by the Department, provided said errors or deficiencies are not chargeable to the petitioner or the Agent himself, in which case a different course shall be adopted, in accordance with Art. 19 of the Law.

CHAPTER IV.

GENERAL LAWS.

Art. 38. The work to be performed on the ground by the expert, according to Art. 19, must conform with the scientific proceedings, in order to obtain the horizontal longitudes on the sides of the claims and the angles made by same with the true meridian. To this end the expert must determine the magnetic deviation of the compass, if this instrument is used to measure the direction of sides. The expert shall mark some of the vortices in the perimeter by means of permanent monuments on the ground, gathering all the necessary information besides, in order to verify said measurements when desired.

The expert shall designate upon the ground the spots where the monuments ought to be constructed, as set forth in Article 41.

Art. 39. The maps of the respective claims must be neatly and accurately drawn on strong paper for the better preservation of said documents. The copies thereof may be produced on tracing cloth. The maps must be made in proportion to the object of the maps in decimals also the length of the sides in meters, the direction of same with regard to the true meridian, and the deviation of the compass at the time of taking the observations and lastly the area of the surface in hectares.

Art. 40. The selection and survey of the claims upon the ground confers no rights to the occupation of same but shall serve simply to show the limits embraced in the mining concession thus obtained. For the final acquisition of the surface required by the petitioner for the development of his mining concession, or that covering the total area of his claims, he must either arrange with the owner of the property by means of purchase, or else present an action before the corresponding Tribunal for the expropriation of said ground, as prescribed by Article 11 of the Law.

Art. 41. The monuments to be fixed on the ground must meet the following requirements:

I. Their position must be permanent as they are intended to make spots not to be changed as long as the concession for the claims undergo no modification. Their construction must be solid and they shall be kept in good repair.

II. A sufficient number of them shall be erected in the most convenient places so that from any one monument, the preceding as well as the following one may easily be seen. Care should be taken to distinguish the same in shape, color, or any other characteristic mark from those of adjacent claims.

Art. 42. The concessionaires of mining claims shall not overstep the limits marked in their respective concessions, (as prescribed by Article 8 of the Law) except in the event of waste lands existing near their property, due petition for the extension thereof being previously presented to the respective Agent, who shall proceed in this case exactly in the same manner as prescribed in these Regulations for the concession of mining claims. The like process shall be adopted in the substantiation of petitions for the ratification of claims.

Art. 43. The possession of a legal concession is indispensable for the operation of development of all mineral substances enumerated in Article 3 of the Law. Therefore no manner of work tending to the development of mines or deposits of said substances, whether on the surface or under ground, shall be allowed without the same being protected by means of a legal title thereto, duly registered.

Art. 44. All petitions of concession for the Development of any substance not enumerated in Article 3 of this Law, shall be rejected, the development of said substance according to Article 4 of the same Law being the exclusive right of the land holder.

Art. 45. In compliance with clause IV of Article 12 of the Law, a petition for the corresponding license accompanied by a horizontal projection and profile of the Adit, reduced to a proportional decimal scale, and all other particulars that may be deemed pertinent thereto, shall be presented to the respective Agent. Said Agent shall forward to the Department the corresponding petition and maps, together with his report on the subject.

The Department, on receipt of these documents and all further information that may be deemed necessary, shall proceed to render its decision.

Art. 46. The owner of mining claims who should be refused the consent of the party that ought to render the legal service, shall present to the Department (in compliance with clause XIX of Article 12 of the law) the corresponding protest in the form of a petition embracing all the necessary information on the subject.

The Department, in conformity with the Agent's reports thereon, and previous hearing granted the dissenting party, or his attorney, shall render its decision within the period previously established for that purpose.

Art. 47. If the petitioner or the party who ought to render the service referred to in clause XIX of Art. 12 of the Law, should deem the Department's judgment unfavorable to his legal rights and interests, he shall be at liberty to appeal from this decision to that of the respective Judge, provided said appeal be made within two months from the date of the Administrative decision.

Art. 48. In places within the Republic, not embraced in the jurisdiction of a mining Agent, the petition for concessions as well as the notices and concessions themselves shall be presented to the Postmaster of the locality, who shall file said documents, expressing thereon the date and time of day presented, and shall notify the Department of Public Works through the mail, and by wire where such means are obtainable.

Art. 49. The Postmaster shall receive and file the petitions for concessions or the concessions themselves only in such cases where his residence lies beyond the jurisdiction of any mining Agent.

Art. 50. The Department of Public Works shall publish in the *Diario Oficial*, the Federal Official paper, every six months, the number of titles issued during that period.

Art. 51. The special book referred to in Article 35 of the Law, shall be kept by such parties as are designated in Article 18 of the Commercial Code, in the manner prescribed for in said Code, chapter I, title II, Book I.

Art. 52. It is the right of every individual to inscribe his titles for future concessions or actual property in the Commercial Registers, as sanctioned by Art. 36 of the Commercial Code in such cases where the proper Register is not kept.

Art. 53. It is compulsory for all mining corporations, as well as for the creditors thereof, to register all their transactions, as stipulated in Articles 25 of the Law and 5 of the By-laws.

Art. 54. All mining corporations are obliged to register the location of their mining claims as well as the residence, or residences of the Company, at the department or judicial District.

Art. 55. If, through the extension of claims or other causes any doubts should arise regarding the place where the registering should be effected, in accordance with the previous Article, the Department of Public Works shall render its decision thereon, communicating the same to that of Finance.

CHAPTER V.

BY-LAWS.

Art. 1. The Agents shall receive in the strictest numerical order, as per inventory thereof, all the provisions found in the present Mining Deputations or offices in place of same, on taking possession of them and all provisions pending resolution shall be given due course, as prescribed in Art. I, title V. of the Law.

Art. 2. All claims in the course of publication shall be placed on the bulletin boards after the Agent has duly complied with the prescription expressed in Article 21; said notice being again published in the official paper referred to in the last mentioned Article.

Art. 3. When the provisions of denouncement have been duly advertised, though the appointment of the expert should be still pending, the Agent shall proceed exactly as in the case of a new petition for concession, without making a new entry in the Register.

Art. 4. With regard to provisions where the surveyor has been appointed but has not, as yet, presented the maps and Report, the Agent shall proceed in like manner as in the case of new petitions without making a new entry in the Register.

Art. 5. With regard to provisions where the maps and Report have been duly presented, the Agent shall proceed to draw a note in duplicate containing the following:

I. Copy of the petition, clearly expressing thereon the name and residence of the petitioner and numerical order of the corresponding document.

II. The Expert's Report.

III. Notice that a term not to exceed two months from the date of said note, will be allowed for the substantiation of the corresponding provision of the Agency.

Art. 6. In the event of provisions on denouncement where any opposition should have occurred before delivery of the maps and Report, the Agent shall proceed in accordance with Article 27 and, if required, as prescribed in Articles 28 to 32.

Art. 7. With regard to provisions where any opposition may have been produced, the expert's maps and Report being delivered or where the opposition takes place within the two months stipulated in article 5 of these By-laws, the proceedings shall be analogous to those in articles 28 to 32, the agencies having the right to the 35 days extension granted in Article 32.

Art. 8. The same proceeding (as in Articles 27 to 32) shall be adopted with regard to provisions undergoing the 20 days probation, expressed in Article 78 of the Mining Code, of Nov. 22d. 1884. The agents in their administrative capacity cannot render their decision in the same manner and spirit as the corresponding Tribunal.

Art. 9. At the expiration of the two months referred to in Art. 5 of these By-laws or in any event provided for in Art. 34, the Agents shall proceed in conformity with the prescriptions of said Article.

Art. 10. For this one occasion the three days stipulated in Art. 19 shall begin to count from the date that the Agent shall announce that the office and business pertaining thereto are open to the public.

Therefore let this be printed, published and circulated for the fulfillment thereof.

Given at the Palace of the Executive Power of the Union, Mexico, June 23th. 1892.—*Porfirio Diaz*.—
To Mr. Manuel Fernandez Leal, Secretary of State and of the Department of Public Works, Colonization and Industry.

And I communicate the same to you for your knowledge and subsequent results.

Liberty and Constitution. Mexico, Junio 25th. 1892.—*M. Fernández Leal*.

TARIFF

For the payment of fees to the Mining Agents.

I. For the inscriptions in the notice, or in the concessions of explorations referred to in Arts. 10 and 11 of the "Regulations or Legal Proceedings regarding Mining" and the corresponding entry in the Records, one dollar.

II. For the proceedings on each concession of exploration referred to in Art. 12 of said Regulations, and entry thereof, two dollars.

III. For registering each petition of mining concession, or extension thereof, or rectification of same, and entry in the Records, one dollar.

IV. For the publication, memorials and notes on provisions, at the rate of twenty cents for each ten lines or fraction thereof, besides ten cents for the title page covering the documents to be paged.

V. For the transcription, checking and legalization of testimonies, certificates and other copies, at the rate of one dollar for each 100 lines or fraction thereof. For the search of a provision or any other document from the Archives, one dollar. When the solicitor cannot furnish sufficient data on the subject and documents of over year's date must be searched, one dollar for every year thus revised.

VI. For the searching of proceedings or any other kind of document from the archives, one dollar.

VII. For every kilometer traversed in any direction, for the prosecution of any transaction in connection with his office, twenty five cents.

VIII. For examination of any kind, whether on the interior or exterior, five dollars.

IX. For inspections, visits or examinations of underground works, five dollars for every 100 meters in depth, or fraction thereof, and five dollars for the corresponding report.

X. For his appearance at meetings not exceeding an hour in duration, three dollars, and one dollar more for every hour extra, or fraction thereof.

Liberty and Constitution. México, June 25th. 1892.—*Fernández Leal*.

TREASURY DEPARTMENT.

SECTION N^o 8.—DIVISION N^o 2.

The President of the Republic has been pleased to send me the following decree:

“PORFIRIO DIAZ, Constitutional President of the United States of Mexico, makes known to their inhabitants:

That the Congress of the Union has seen fit to decree as follows:

The Congress of the United States of Mexico decrees:

Art. 1. In accordance with the provisions of the articles relating to the new mining law, there shall be established a Federal property tax, which shall consist of two parts: one part, which has to be paid once only in stamps, to be affixed to all titles of mining property, and the other part which has to be paid yearly for each one of the mining fields of which a grant is composed.

As regards the tax, the mining field (“*pertenencia*”) or unit of concession shall be the one established by Art. 14 of the new mining law. Consequently all old and new mining fields existing in the Republic, whatever be their extent, shall be valued according to this unit.

For the fractions of mining fields, that amount to one half or more, the tax shall be paid as if they were whole fields and nothing shall be paid for the fraction that is less than one half.

Art. 2. Within the improrogable space of time, counted from the promulgation of this law until the 31st of October of the present year, every owner or actual proprietor of mines whatever title he may have, shall be obliged to present his documents at the office of the Treasurer which the Regulations of this law may determine, so that the new stamps of ownership of the mines may be fixed to the title and account may be taken for the payment of the annual contributions of the number of mining fields (*pertenencias*) which form the property, a corresponding Register being opened for this purpose.

The titles which in future the Department of Promotion will extend in accordance with the new mining law, have to carry the stamps corresponding to the same. These stamps shall be furnished by the party receiving the grant and shall be in proportion to the mining fields (*pertenencias*) which the grant contains.

Art. 3. The property stamps of the mines shall be of the value of ten dollars and have to be affixed to the titles of the property, one for each mining field of ten thousand square meters. The rule established in Art. 1 to be followed as regards the fractions.

These stamps have to be cancelled by the office of the Treasury authorized to receive the titles which were extended up to the 30th of June of the present year: the Department of Promotion cancelling those belonging to the titles which are extended in accordance with the new mining law.

Art. 4. From the 1st. of July of the present year, all owners or proprietors of mines shall be obliged to pay the sum of ten dollars annually for each one of the fields (*pertenencias*) of which their grants are composed.

The amount of the tax shall be the same whatever is the nature of the substance which is being worked in the understanding that the mine has been acquired through denouncement, or by special grant before the date on which the new mining law takes effect, and that in future it shall be acquired by grant and title, in accordance with the new law.

Only those mines shall be exempt from the payment of the annual contribution on mining fields, and of the stamps on the titles of the property, which have been expressly freed from the same by contracts, made with the Executive in virtue of the authority given by the Legislature and approved by the same. The exemption shall only last for the time stipulated in the contract, without opportunity for prorogation.

Art. 5. The yearly property tax on mines shall be paid in three advance payments during each fiscal year, this payment to be made during the first month of each one third part of the year, in the office of the Treasury which the Regulations of this law shall determine and to which the tax payers are obliged to go in order to make their payments, without further need of notification or any other requisite on which they might found delay or excuse.

Art. 6. Failure of presentation of the title which secures the possession of the mine, within the time fixed in Art. 2, shall be punished by a fine equal to the amount of the stamps which the title are to carry, if the same be presented within the two months following the expiration of the time allowed. For every two months more that the presentation is delayed, the holder shall incur a fine equal to the amount of the stamps.

The concealment of the number of mining fields shall be punished with a fine equal to double the amount of the stamps which the title ought to have had for the conceded mining fields (*pertenencias*), to which shall be added double the amount of the yearly tax for the whole of the time that the same has not been paid. This shall not interfere with the civil or criminal responsibility to which the concealar is liable and to which he shall be subjected in due time.

Failure to pay the annual property tax within the first month of each one third part of the year, shall cause the owner to incur a fine amounting to fifty per cent of the amount of the tax in case he pay during the second month.

If the payment be made in the third month, the fine shall be equal to the amount of the tax. When once this last named space of time has expired without the tax and the accumulated fines being paid, the mining property shall be lost to the owner without recourse whatever. The Department of the Treasury shall make the corresponding declaration and shall publish the same in the official paper so that any other party may petition for the property.

Art. 7. When the owner of the mine sells the same, he shall give the respective notice for annotation in the Register, and the bill of sale which is given shall carry the stamps which according to the stamp tax it should have.

Art. 8. In case it no longer suits any person or company to continue working the mine or mines which he or it may possess, the corresponding office of the Treasury shall be advised in writing, so that the tax may be settled up to the date of the notification and the corresponding annotation be made in the Register.

Alfredo Chavero, President of the House of Representatives.—*V. de Castañeda y Nájera*, President of the Senate.—*Juan Bribiesca*, Secretary of the House of Representatives.—*Mariano Bárcena*, Secretary of the Senate.

Therefore, I order that the same be printed, published, circulated and given full compliance.

Given in the palace of the Executive of the Union, in Mexico, on the sixth day of June 1892.—*Porfirio Díaz*.—To the Secretary of State and Expedition of the Treasury and Public Credit, Citizen *Matías Romero*.—Present."

Liberty and Constitution. Mexico, June 6, 1892.—*Romero*.

DEPARTMENT OF STATE AND OF THE TREASURY AND PUBLIC CREDIT

MEXICO

SECTION NO. 8.

The President of the Republic has seen fit to approve the following:

REGULATIONS OF THE MINING TAX LAW OF JUNE 6th. 1892.

TAX UPON MINING PROPERTIES.

Art. 1. The tax established by this law is applicable to the mining properties now existing or which may hereafter be authorized by the Department of Public Works (Secretaría de Fomento) in conformity with Article 3 of the law of the 4th of the current month. The mining properties defined in Sections III and IV of Article 1 of the Mining Code of November 22, 1884 are, in so far as refers to taxes, not subject to the present law, being liable only to that dated June 6, 1887 and such others as may be now in force.

Art. 2. The tax upon Titles shall be paid by affixing to the last Deed of Transfer (Traslative) that may be presented by the interested party, the corresponding amount of document and book stamps (documentos y libros) in conformity with Article 3 of the law, the same to be cancelled as therein prescribed.

Art. 3. All owners and present holders of mines comprised in those referred to in Article 1 are obliged to present to the proper «Jefatura de Hacienda» in the States or to the «Administraciones de Rentas» in the Territories, within a term which shall not be extended, expiring on October 31 of the present year, and under penalty of the fines which may be applicable:

I. The original Titles of possession, pursuant to Articles 4, Section 6 of the Ordinances of May 22, 1783 and 9 of the Mining Code of November 22, 1884.

II The last Deed transferring ownership, in the event of the present owner or possessor being the assignee of the original denouncer.

III. A Declaration, in duplicate, under protest of alleging the truth, which shall express in detail the name and place of residence of the owner or holder, and in such cases, that of Company and its Manager or Representative; the location and extension of the dependencies, and surplus grants in conformity with latest measurements, expressing whether these are contiguous or interrupted; the amount of all dependencies and surplus grants taken possession of; the conversion of this amount into Hectares, according to the terms of Article 14 and Transitory Article 4 of the law of June 4th, of the current year, and the reduction the petitioner may desire, if any, in conformity with Article 4, Transitory, of the Law cited, and 8 of that of June 6th, 1892.

Art. 4. The presentations of the Titles referred to in the foregoing Article has for its sole object the identification of the mine and the justification of the exactness of the conversion of the dependencies into hectares.

Art. 5. The offices mentioned in Article 3 will return immediately to the interested party the duplicate

of the declaration, after having noted thereon the date and hour at which the same was presented, affixing to the last Title the proper stamps.

Art. 6. Within three days subsequent to that on which the «Jefatura de Hacienda» or «Administración de Rentas» may have affixed the stamps, the Documents or Proceedings (Expediente) shall be forwarded to the Treasury Department (Secretaría de Hacienda) together with a Report in which such office shall present and substantiate its opinion as regards the exactness of the declaration made by the person interested.

Art. 7. Upon the receipt of the Documents or Proceedings (Expediente) by the Treasury Department in the manner cited in the last preceding Article, the latter will determine, after having procured such information thereon as it may deem essential, whether the declaration shall be accepted or rejected.

Art. 8. As provided for in Article 6, should the Department find the Declaration to be exact, it will return the Titles to the proper «Jefatura de Hacienda» or «Administración de Rentas» in order that either of the latter, as the case may be, may deliver the same to the interested person and certify upon the Duplicate referred to in Article 5 the fact that the tax has been paid.

Art. 9. Should the Treasury Department not consider correct the manifest of the interested party, it will fix the number of pertenencias for which the respective stamps must be paid.

Art. 10. Within three days subsequent to the notification to the interested party, in the event provided for in the foregoing Article, the latter shall manifest whether or not he conforms to the number of dependencies determined by the Treasury Department, it being understood that his acceptance thereof will be taken for granted should notice to the contrary not be received within the term indicated.

Art. 11. Should the party in interest not be satisfied with the number of grants (pertenencias) determined by the Treasury Department (Secretaría de Hacienda), the latter shall designate an Expert, who, with the documentary proceedings (expediente) in his possession, will make an examination of the property and mineral possession, presenting within the term of forty days a report thereon which shall be employed by the said Department as a basis upon which to render a definite determination in the matter.

Art. 12. Basing the same upon the report made by the Expert appointed, the Treasury Department (Secretaría de Hacienda) will render a definite decision in the premises, returning the Proceedings to the proper «Jefatura de Hacienda» or «Administración de Rentas» where the stamps corresponding to the amount lacking will be duly affixed and a memorandum made of the duplicate declaration. In the event of cause existing therefor, the petitioner shall be bound over to the proper Judicial authorities in conformity with paragraph II, Article 6 of the law of June 6th, 1892.

Art. 13. In any concession which may be hereafter authorized by the Department of Public Works (Secretaría de Fomento), after having duly affixed to the titles the proper stamps, it will render to the Treasury Department (Secretaría de Hacienda) the information prescribed in Article 37 of the Regulations of June 25, 1892.

Art. 14. The concessionaires of Mineral Zones not desiring to avail themselves of the privileges conceded to them by the second part of transitory Article 3 of the law of the 4th of the current month; are required to appear before the Treasury Department (Secretaría de Hacienda) with a declaration, in duplicate, conforming to the requirements of Article 3 of the present regulations, and in which they will also state the date of their respective concessions and whether or not they have incorporated within the limits of such Zones mineral dependencies distinct from those conceded by their contracts.

Art. 15. The Treasury Department (Secretaría de Hacienda), in view of the declaration filed with it in conformity with the prescriptions of the preceding Article, will request a report thereon from the Department of Public Works (Secretaría de Fomento), rendering its decision in accordance with the information communicated by the latter Department, and issuing to the party in interest a certificate covering the effects operating in pursuance to the provisions of the final paragraph of Article 4 of the law dated the 6th instant.

Art. 16. For the same purpose, the Concessionaires of such Zones, dependencies (pertenencias) foreign to those conceded by their contract, are required to present, within eight days subsequent to that on which they receive notice from the Department of Public Works (Secretaría de Fomento) that such incorporation has been accepted, a declaration in duplicate to the Treasury Department (Secretaría de Hacienda), which latter Department will issue the certificate provided for in the foregoing Article.

ANNUAL TAX.

Art. 17. The annual Tax referred to in Article 4 of the law will be collected by the Stamp Office (Renta del Timbre) in accordance with the Laws of March 31, 1887 and December 9, 1891, and such others, bearing thereon, now in force, and is payable in Interior Rent Stamps (Estampillas de la Renta Interior), the face thereof to bear a stamp, diagonally placed thereon, reading: «MINING TAX» (Impuesto Minero).

Art. 18. The Stamp Offices (Administradores Principales de la Renta del Timbre) will receive, as sole fee, two per cent, of the gross amount realized from the sale of stamps for the payment of the annual Mining Tax.

Art. 19. The Stamp Offices (Administradores Principales de la Renta del Timbre) will keep a Register of the Mines situated in their respective Districts, by aid of the data which the Treasury Department (Secretaría de Hacienda) will furnish for that purpose.

Art. 20. The owners or holders of mines will make their payments in the Principal or District Sub-Tax

Office (Administración Principal ó Subalterna del Timbre) corresponding to that in which such mines may be located; the Treasury Department (Secretaría de Hacienda), however, may modify this rule in instances where it may be deemed equitable and convenient to do so, in such case advising the General Office (Administración General) that the latter may transmit information thereof to the proper District Branch of the Principal Tax Office.

Art. 21. The Principal Stamp Officers (Administradores Principales de la Renta del Timbre) will require the Sub-Offices or Agencies to forward them opportunely the stub of the Stamp sold for each mine, affixed to pages on which they will state for which mines respectively the estamps have been sold, and whether the sale corresponds to the extension of the property detailed on the Titles and indicated on the duplicate thereof returned in accordance with Articles 8 and 12.

On the receipt of these pages or sheets by the Principal Stamp Officers (Administradores Principales) they will inform the Treasury Department (Secretaría de Hacienda), to which they will also forward at the end of each Fiscal year, all such stamped pages or sheets received, corresponding to each Mining Negotiation.

Art. 22. Each one of the quarterly payments referred to in Article 5 of the Law must be made previous to July 31st. of each year. For this purpose, the respective Principal or Sub-Stamp Office (Administración Principal ó Subalterna del Timbre) will deliver to interested parties a printed ticket or placard containing:

I. The Title or Heading: «Mining Tax» (Impuesto Minero).

II. The name of the State and Municipality to which the office issuing the ticket or placard may correspond.

III. The name of the mine;—number of dependencies (pertenencias) for which the tax is paid;—municipality in which the same is located;—name of owner or company which may be in possession thereof and the Registry number of the Titles.

IV. The quarterly amount payable.

V. Three blank columns destined to receive the stamps corresponding to each quarter, which stamps are to be duly cancelled.

The interested parties are required to place the ticket or placard referred to in this Article in a visible par of the office of the negotiation or owner of the mining properties, with the stamps accrediting the payment affixed thereto.

Art. 23. Upon any quarterly payment becoming due, as provided for in the foregoing Article, and upon the Stamp Office (Administración Principal de la Renta del Timbre) being advised that such payment has not been satisfied, it will communicate the fact to the Fomento Agent, in order that the latter may, during one month, fix a notice thereof on the Bulletin Board (Tabla de Avisos) mentioned in Article 21 of the Regulations of June 25, 1892, which notice, as regards the creditors of the mines, will operate as a citation to avail themselves of the privileges indicated in Article 25 of the Law of the 4th instant.

The payment of the Tax by these creditors can not be effected until the notice referred to has been placed upon the Bulletin Board (Tabla de Avisos) of the Fomento Agency.

Art. 24. If within the district of any Principal Stamp Office (Administración Principal del Timbre) there should happen to be no Fomento Agency to which the notice mentioned in the preceding article can be given, the said Administración Principal will notify the creditors of the mines through the respective District Court (Juzgado del Distrito), ascertaining previously in the proper commercial Registry Office (Registro del Comercio) the names of such creditors.

Art. 25. Upon the expiration of the terms referred to in the final part of Article 6 of the law, and the tax still remaining unpaid, the Principal Stamp Offices (Administraciones Principales de la Renta del Timbre) will immediately advise the Treasury Department (Secretaría de Hacienda), in order that the latter may at once declare the loss of the property, and the Department of Public Works (Secretaría de Fomento) dispose of the mine. This ruling will be published in the "Diario Oficial" (Official Daily).

Art. 26. The notice prescribed in Article 7 of the law will be made in writing, by the party in interest, to the Principal Stamp Office (Administración Principal de la Renta del Timbre) through the proper local Sub-Office or Agency. The principal Administration will advise the Treasury Department (Secretaría de Hacienda) thereof for entry in the Register.

Art. 27. The notifications referred to in Article 8 of the law will be made also as prescribed in the last preceding Article. The principal Administration will transmit the same to the Treasury Department (Secretaría de Hacienda) that the latter may make entry thereof in the Register and order their publication in the "Diario Oficial" (Official Daily), and effect the necessary liquidation, which it will communicate to the proper Principal Administration that the latter may return, in such instances, the amount which may be due the petitioner.

Art. 28. The Concessionaires of Zones referred to in Articles 14 and 16 of this law are required to, within the first ten days of the fiscal year, to communicate with the Treasury Department, that the latter, while in possession of the documents mentioned in said Articles, may issue the voucher exempting them from payment of the Annual Mining Tax (Impuesto Anual de Minería) during the current fiscal year.

TRANSITORY PROVISION

For the present year only, the payment of the quarterly amount maturing in July next will not be

required in that month, but can be made on any day during the months of August, September and October; or the two quarterly payments will mature on the 30th. of November next, may be effected together previous, to that date.

México, June 30th., 1892.

Romero.

ANNEXED CIRCULARS.

Department of Fomento, Colonization and Industry of the Mexican Republic—Third Section.—Circular No 1.—When the new Mining Law goes into force this office reckons on your intelligence and progressive ideas, as well as on the simplicity and clearness of the principles of the law itself, in order that the application of the same and its respective regulation may not offer any practical difficulties.

Taking into consideration, however, that in the transitory period, now entered upon, some doubts and difficulties might arise, this office, in order to avoid them, deems it advisable to make certain observations to you relative to the prominent points of said law and its first regulation.

As you will see, from Article 3 of the new law, the detailed specification of Articles, that require a special concession to be worked, is clear and decisive and cannot for the same reason, give rise to any doubt as to the request for concessions that can legally be presented.

The new law grants complete liberty regarding the number of *pertenencias* that may be asked for, without taking into account whether there are one or various petitioner or whether they represent a company, the interested party may acquire as many *pertenencias* as he may desire.

Although it has endeavored to make the steps which, according to the law, have to be taken in regard to prospecting, easy, while also giving the prospector sufficient guarantee, I recommend, that you, on your side, be especially careful, when exacting the guarantee to be given by the prospector, to take into account the true prejudice that may really be caused to the owner of a property, with the view of prudently estimating the amount of said guarantee, so as not to make it excessive.

In the registration of request for concessions effort has also been made to give the petitioner every kind of security, with the object of avoiding the frequent complaints which, in this respect, occurred under the system of denouncement. When the requirements, fixed by the law in this matter, are complied with, sufficient publicity shall be given the request, thus relieving the Agents of the responsibility held by the Mining Deputation, owing to the manner in which the publications were made; and leaving into the petitioner and such persons as may, for some cause or other, be interested in the matter to look after the part that may concern them.

As the indication and measurement of the *pertenencias* on the spot is of a great importance, I recommend you to endeavour that the experts, to whom you entrust these operations, fully understand their task and the responsibilities which they will incur through executing their work badly; this, according to Article 19 of the regulation, not only refers to regularly inscribed experts, but also to purely practical ones, and gave rise to the provisions of Articles 38 and 39 of the regulation, which are in accordance with the ruling law of land measurements of the 2nd of August 1863.

As the law does not require the presence of the Fomento Agent or any other authority at the operation of indicating or measuring the *pertenencias*, the petitioners will not now be put to the expenses which the presence of said Authorities before caused, without, however, depriving the operations of all their necessary legal force, in view of the fact that the operation is in reality reduced to technical work and does not involve the taking of property nor discarding of rights, because these are safely guarded by the provisions of the law and the regulation. The Expert bears, during his operations, the character of a legitimate trust from the Public Authority, as per the provisions of the regulation.

It has been endeavored to make the steps necessary to put a request for a mining concession through as easily as possible, and also that they should notably differ from the steps that had to be taken according to the old law; it will be your duty to see that the steps are complied with within the time specified by the regulation, extra-officially, inducing the petitioners to carry them through, without the latter, however, being obligatory on the part of the agent. I will also call your attention to the advisability of pointing out to the petitioners the facilities which the law offers to bona fide parties in acquiring a mining property, at the same time that it prevents the slow and the deceitful speculator from impeding the acquisition of the concession by other parties.

In order to avoid any doubts or perplexity, with regard to the petitioners, experts or oppositionists, as well as any difficulties that may arise in the sending of the copies that have to be transmitted to the Ministry, I request you to be exceedingly explicit without prejudice to being concise, in the wording of the extracts, records and reasons that may be expressed in the documents as well as to be very careful in arranging them.

It is advisable to inform you, in order that you may notify the petitioners for mining concessions, that they need not have an attorney or other kind of representative in this capital for the purpose of receiving the title to their property; because, as soon as the documents have been approved and the corresponding stamps

furnished, in the manner prescribed by the regulations, the title will be forwarded to the petitioner, through the respective agent of Fomento, without any extra expense being incurred by the interested party.

In conformity with the basis which governs this law, and as the miner is not compelled to begin his development work within a stated time, he is at a liberty to make arrangements with the owner of the land as to the time most suitable for such commencement, in order to give greater scope to his development work, thus avoiding the expense of taking possession, which is not obligatory by the law, it being sufficient in order to acquire the preference to have the documents approved, under the actual state of the common legislation of the entire Republic and the corresponding title will be issued, which is amply sufficient to enforce all judicial rights. Such parties, who are desirous of being put in possession of what they have acquired, with greater celerity, will in future have to apply to the judicial authorities for such purpose.

Taking into consideration that the law, as well as the regulation, only authorizes the agent in their dealings to exercise purely administrative and clearly defined functions, this office trusts that the work of the Agents will be carried out more expeditiously than was the case with the Mining Deputations, and that thereby the development of the mining industry will be greatly enhanced.

This office feels confident that your intelligence, your zeal for the public welfare and your competency to discharge the duties with which you have been entrusted, will prevent any difficulty in the application of the provisions of the regulation and will facilitate the acquisition of mining properties, in conformity with the principles of the new law.

Liberty and Constitution. Mexico, July 1st. 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 2.

This Office, having consulted the Treasury as to whether the Mining Agents appointed will require credentials for the despatch of their business, has received the following decision:

"This Office has received your attentive communication No. 104 of the 5th instant in which you inquire whether the Agents appointed by the Office under your charge, will, in virtue of the new mining law of June 4th. last, require credentials for the despatch of their business.

"In answer, I have the honor to inform you, that, in conformity with the previous resolution of the 25th. of September 1888, which was brought about by a similar case of officials or employees who merely received emoluments, it will be necessary to issue credentials to the Mining Agents in the States and Territories for the despatch of their business and to cancel a ten dollar stamp on same."

Which I communicate to you for your information and consequent ends, with the understanding that a term of two months is granted you in which to provide yourself with said document.

Liberty and Constitution. Mexico, 22nd. July 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 3.—Owing to the case having arisen, where petitioners for a mining concession, after having presented the corresponding request, manifesting the desire to increase the number of grants asked for, and as the Agent enquired from this Office, whether they should be looked upon as having renounced the first petition and made to present a new one, the President of the Republic, to whom the matter was referred, decided as follows: that in case the declaration for an increase or reduction of pertenencias is made by the petitioner before the publication of the extract referred to in Article 21 of regulation for procedure in mining matters, then it will be sufficient that such manifestation appears in the petition, in duplicate and in the register book, the corresponding extract being published together with such modification, and without the necessity of making a new petition; but if the alteration is asked for after the publication of the extract, then the renouncement has to be carried out and a new petition presented.

Which I communicate to you for your information and with the view that you act in any similar case according to the tenor of the aforesaid resolution.

Liberty and Constitution. Mexico, August 1st. 1892.—*M. Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 4.—The Mining Agent of this Office, at Monterrey, in a communication dated the 6th. of July last, consulted as to the steps he should take with petitions for concessions already admitted and which the petitioners renounce, and in reply, this Office in a communication dated 30th. of same month informed him as follows.

"As a decision of the reference made by you in communication dated the 16th. instant, I have to inform you that the renouncement can be made, before or after the publication, in person or by writing; if it is before the publication and in person, it will be sufficient if this is noted on the documents, and the interested party should sign such entry, so that it can be archived with the respective documents, and if the renounce-

ment is made by writing, this will be filed with the documents that are archived. In case the renoucement is made during the publication of the notices, the corresponding notice, that is being published, will be taken from the board and the same steps indicated will be taken whether the renoucement is made in person or by writing. Lastly, I have to inform you, that in the statements, which te Agencies have to make monthly, as to the petitions for concession which have been carried out during the preceeding month, these renoucemments have to appear."

Which I communicate to you for your information and respective use.

Liberty and Constitution. Mexico, August 2nd. 1892.—*Fernández Leal*.

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 5.—It is of the greatest interest to this Office to have exact information as to the movement in the mining business under the jurisdiction of your Agency, because in view of the number of petitions, as well as the number of grants asked for, a clear idea can thus be formed of the importance of the various minerals of the country and this Office will then be able to judge as to the steps that should be taken in order to favor the development of the mining industry.

In order with the greater facility to be able to collect the information, which, in conformity with Article 9 of the ruling regulations, the Agents have to remit to this Office, statements or blank forms have been prepared, of which I send you the necessary copies, in which the subjects regarding which information is required are clearly stated, and I must request you to be most regular in sending in these forms, when filled up, as well as to be exact in the information given in them.

Said information should commence together with the data which belong to the present fiscal year, and be continued afterwards in conformity with the indication of the already referred to Article 9 of the regulations.

Liberty and Constitution. Mexico, August 1st. 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 6.—As it is of considerable interested to this office to know the prices and the consumption of Articles employed in the mining industry, I send you some blank forms, which have been drawn up for this purpose and so that you can supply the data therein indicated informing you that the data in regard to consumption should correspond whith the total consumed in all the mining camps within the jurisdiction of your Agency.

I caution you to use the greatest exactitude and regularity in the preparing, and monthly sending of these forms, starting with those corresponding to the present fiscal year, and that the data dealt with be made out according to the decimal system of weights and measures.

Liberty and Constitution. Mexico, August 9th, 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 7.—In view of an inquiry made to this office by one of its Mining Agents, as to the application of the Stamp Law with regard to the Registry books, that have to be kept in the Agencies said inquiry was referred to the Department of the Treasury, which resolved as follows:

"Paragraph 52, annex Ll of Article 6 of the Law does not state that the books and indexes of Mining Deputations have to be stamped but on the contrary exempts them from the impost, and consequently from the autorization (of the Stamp Office), and although the registry, to be kept by the Agents to the Department of Fomento, and to which the present enquiry refers, is of public interest, because its entries give and define rights; still, as the Agencies are considered as federal offices, the books to be kept by them are looked upon as similar to those in the other offices and only require an official authorization, i. e. that of the Department of Fomento, in acordance with Article 17 of the regulation for administrative procedure in mining matters dated the 25th. of July last."

Which I communicate to you for your information and consequent ends.

Liberty and Constitution. Mexico, August 10th, 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 8.—In order to facilitate the carrying out of the decision in the circular of this office date 22nd. of July last. with regard to the credentials to be issued to the Mining Agents of this Department, you should deposit with the Post Office of your locality the sum of thirteen dollars and twenty cents, which is the amount of the stamp, requisition and copies of said credentials advising this office when the deposit is made.

If, on receipt of the present circular, you should already have sent, to this office the required \$10 stamp. you will then merely deposit with the Post Office referred to the remaining \$3.20 for the expenses incurred

for the requisition and copies of the credentials mentioned, which will be forwarded to you in due course, as soon as you comply with the prescriptions of the present circular.

Liberty and Constitution. Mexico, August 29th 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 9.—Under date of the 15th. instant the Treasury Department notifies this office as follows:

"In view of the reasons set forth by the miners of Taxco de Alarcon in a petition made to this office under date of the 22d of July last, they, as well as the Chiefs of Hacienda, Administrators of the Stamp Office, and other corresponding offices, have in answer, by means of a circular, been notified of the following resolution:

"In order to obviate the difficulties that may arise in various parts of the national territory for the purpose of carrying out the prescriptions of Articles 3 and 5 of the Regulations of the 30th. of June last, of the law of imposts on mining, owing to the distance of some mining camps from the respective Hacienda office, the President of the United Mexican States has deigned to decide, that, in such cases, the nearest Agent of Fomento shall, by means of the payment of the fees which for this transaction are fixed by the corresponding office and which have to be collected from the interested parties, be authorized to receive the manifestation prescribed by said Article 3 and a copy of the original titles, as well as the latter ones referring thereto. This copy will be examined and legalized and together with the manifestation will form the documents which the Agent, jointly with the report to be made as to the exactness and reduction of the pertenencias, will send to the corresponding Hacienda office, so that the latter, without any further operations than that of taking note, can take the course laid down in Article 5 of the Regulation; the Agents of Fomento will, however, be careful to affix and cancel the legal stamps on the original titles, retaining them in their possession, until final decision is given, in order to return them to the owners, after indicating on them the order, number and date of the annotation and the registration of the Federal Mining Impost, that may have been fixed upon them by the respective Treasury office.

"Which is notified you for the requirements necessary."

"I have the honor to advise you of it, in order that you may notify the Agents under your jurisdiction and indicate to them the fees which they ought to collect and the steps they have to follow in the operations recommended to their care."

Which I communicate to you for your information, notifying you that over and above the fees for examination and authorization of titles, fixed by the tariff of the regulations, you should collect the sum of \$2 for revising the reductions of the old pertenencias to the new, in conformity with the law, and for the corresponding report, to be made by the respective Treasury office.

In case any error or discrepancy in the conversion of the grants should occur in this revision, you should call the attention of the interested parties to it, so that they can make the proper rectification and amend their manifestations; and if they do not agree to this you should make a note of it in the report.

Liberty and Constitution. Mexico, August 30th 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 10.—As one of the Mining Agents has consulted this office with respect to the fees that should be collected for the certified copies of plans, which they have to issue, it has been decided that whereas, in accordance with Article 21 of the regulations of administrative procedure, the experts are the persons who should present the plans in triplicate, with the object that one copy be filed with the documents and the other two copies, together with the one attached to the documents, be sent to this Office, examined and authorized by the Agent with the corresponding stamps, which have to be provided by the interested party. The Agent may collect as a fee, for the examination and authorization referred to, the amount of one dollar.

In case the interested parties desire to have a copy of the plans, filed in the archives of the agencies, it can be granted them or the persons designated for such purpose to make said copies within the premises of the Agency, the Agent collecting for the examination and authorization the same fee of one dollar.

Which I communicate to you for your information and guidance.

Liberty and Constitution. Mexico, September 1st. 1892.—*M. Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 11.—In view of the inquiries recently made by some Mining Agents, asking for instructions with respect to the steps they should take in cases where, in virtue of the provisions of the Mining Law of the 4th. of June 1892, petitions are presented to them for amplifying, rectifying, or reducing mining properties, the President of the Republic, to whom I communicated these inquire, has deigned to issue the following resolutions:

When the amplification of the number of pertenencias of a mining concession is desired, the petition should be made solely in regard to the new pertenencias that it is wished to acquire, in the same manner as

if a new concession were asked for, it being necessary to issue the corresponding title to the new portion of property asked for. The plan, made by the expert, should be for the new portion of property, duly connecting it with old one, and the landmarks should be placed on the division lines of the new property, in conformity with the provisions of the respective Regulation.

In the case of rectification, when it is merely a question of verifying the measurements of the grants on the land, in order to make them agree exactly with the title to the property, then the steps to be taken will be the same as for a new concession, and the landmarks should be placed in conformity with the Regulations; but as it is not necessary to issue a new title, the matter will be settled by the Agent handing to the interested party a certified copy of the steps taken, which the latter will attach to his title of the property. But, if on asking for a rectification, it is desired to correct the errors that may exist in the title to the property, then the issuing of a new title, in conformity with the law, will be proceeded with, and consequently all the steps necessary for a new concession will previously have to be taken.

When a reduction of grants is asked for, which have been acquired in accordance with the new law, this does not necessitate the issue of a new title to the property, and the Agent before whom the petition, together with the respective title, is presented, will name an expert who, at the expense of the interested party and within the time which the Agency may deem necessary, will make a plan of the reduced property and place the necessary landmarks in conformity with the Regulation.

The Agent will make a note of the reduction asked for and affected in the Registry of petitions for concessions of the Agency, as well as on the title to the property, which he will deliver to the interested party, together with a certified copy of the steps taken, and the matter will be determined by a notification of the reduction made being at once sent to the respective Stamp Office.

In case it is a question of the reduction of grants acquired prior to the law of the 4th. of June 1892, similar steps will be taken, the Agent furthermore being guided, when necessary, by the provisions of Circular No. 9 from this office of August 30th.

The Agent should give the corresponding particulars of all cases that occur in the monthly report which he has to send to this Office.

And I communicate all the foregoing to you for your information and consequent ends.

Liberty and Constitution. Mexico, September 3rd. 1892.—*M. Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 12.—This Office under date of July 30th. last, addressed the following communication to the Foreign Office.

The new mining Law of June 4th this year, does not in any of its Articles put any restriction against foreigners acquiring mining properties in the Republic. Notwithstanding this the Law of February 1st. 1856, as to the acquirement of properties by foreigners, is still in force, as well as the one of May 28th. 1886 regarding foreigners and naturalization, in accordance with which this office has been granting the permits to acquire real state, including mining properties as it is thus prescribed regarding them in Article 6 of the Mining Code, which has ceased to be in force.

In view of this I shall feel obliged if you will advise this Office, whether foreigners, who wish to acquire mines within the frontier zones of 20 leagues, are obliged to solicit the corresponding permit according to the terms prescribed by the law of February 1st. 1856.

In case you are of this opinion, this Office takes the liberty of pointing out to you the advantage of fixing the steps for the solicitation of the permit within the time specified by the mining law in force for obtaining the title to a mine, because, as said time cannot be extended, it might occur that the foreigner may not succeed in obtaining the concession and will thus lose the right to the pertenencias he solicited, owing to his not having obtained the permit to acquire the property within the proper time.

In order to avoid these difficulties, should your Office approve of it, it might be decided that, when a foreigner presents his petition for a mining concession, he should, more or less at the same time, send in his petition for a permit to this Office through the respective Governor, so that when the time comes for issuing the title to the property, the corresponding permit will then have been granted or refused.

To this communication the foreign Office replied as follows:

Mexico, August 13th 1892. I take note of what you are good enough to communicate to me in your dispatch of July 30th last, issued from the Third Section under No. 1,083, relative to permits solicited by foreigners, who wish to acquire mines within the frontier zones of 20 leagues.

In answer I have the honor to inform you, that foreigners have still to ask for permits according to the foreigners law, because this being of a special nature, cannot be looked upon as abolished by the New Mining Law, which is of a general character and does not contain any proviso that can be considered as expressly abolishing this requirement; but this office finds no objection to, on the contrary considers the practice proposed by the Office under your charge, useful, in order to avoid the delays and difficulties indicated.

Which I communicate to you for your information and consequent ends.

Liberty and Constitution. Mexico, September 5th, 1892.—*M. Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 13.—Inquiries having been made by various Mining Agents as to whether petitions for concession can be admitted, when presented by persons in charge of Mining Companies holding merely a letter of authority, this office, taking into account that it is a question of executing a mandate, which it is necessary should be authorized by a power of attorney in due form, considers that the presentation of the latter must always be insisted upon. But in order to facilitate the interested parties in complying with said requirement and in order that they should not lose the opportunity to present their petition for a concession in due time, those made in the name of other persons may be admitted, when the person presenting same gives a guarantee and undertakes to produce a legal power in due form at the latest within 60 days, which according to Article 21 of the regulation of the Mining Laws, is the time fixed for the expert wherein to present the plan and respective report. The undertaking must be duly entered in the documents, as well as the note that if such time should elapse without the power being presented, it will be to the detriment of the interested party.

I advise you of this for your information and consequent action.

Liberty and Constitution. Mexico, October 15th 1892.—*M. Fernández Leal*.—To the Mining Agent of the Department of Fomento at . . .

Department of Fomento, Colonization and Industry of the Republic of Mexico—3rd. Section.—Circular No. 14.—As the General management of the Stamp Office has issued a circular relative to the stamps necessary for mining exploration permits, given by the owners of lands in order to make explorations according to article 13 of the Mining Law, as well as concerning the notices when reference is made to national lands, this Office, in view of the fact that said permits and notices do not form part of the documents nor are registered in the books, wherein requests for concessions are entered at the Agencies, begs the Treasury to be good enough to explain the nature of the order given to the Stamp Office, furthermore taking into account the before mentioned reasons laid before it for consideration, relative to the advisability of facilitating mining explorations in order to further the development of this important branch or the public wealth.

As a result of said considerations the department of the Treasury has issued the following resolution to the General Manager of the Stamp Office and transcribed it to this Office.

«The President of the United States of Mexico has deigned to decide that the nature of the order given by this Office, under date of August 15th. last, relative to the use of stamps on permits granted for making explorations in search of mines, shall be understood as follows:

When these permits are given unconditionally by private parties, with regard to lands of their own property, they are not subject to a stamp tax; but when they contain stipulations of any nature whatsoever, they will be considered as contracts and must bear a 50 cent stamp on each sheet, according to annex A., paragraph 29, article 6 of the law of March 31st 1887.

The President has likewise been pleased to decide, that the notices, which according to article 13 of the Mining Law have to be given to the Authorities through whom mining explorations are made on national lands, are not subject to the respective impost.

Which I advise you of for your information in answer to your communication No. 1,342 of this date.»

Which I communicate to you for your information and consequent ends.

Liberty and Constitution. Mexico, October, 17th. 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at . . .

Department of Fomento, Colonization and Industry of the Republic of Mexico.—3rd. Section.—Circular No. 15.—This Office having consulted the Treasury as to whether the explanatory notes which the experts have to send in with the plans, as well as the copies of the documents which the Agents remit to this Office, should be stamped, said Treasury Department has, in answer, forwarded to this Office the following report drawn up by the General Management of the Stamp Office.

«The Accountants Office of this Management, to whom I referred for examination your communication No. 1,679 of September 10th last, has given the following decision:

In this order information is asked regarding the inquiry, as per communication enclosed, made of the Treasury by the Department of Fomento, as to whether stamps should be affixed to the explanatory notes which the experts have to send in with the plan according to Article 21 of the Mining Law, and whether they have to be used, and of what value, on the copies of the documents which the Agents draw up and which will begin to be received shortly.

The Accountants Office, similarly to the Department of Fomento, is of the opinion that the explanatory notes of the plans do not require stamps, in view of the fact that they are not needed on the plans themselves, according to part II of paragraph 41, Article 6 of the Law; neither should stamps be used on the copies of documents, inasmuch as on drawing up these documents they have to bear the stamps prescribed in part I of the same paragraph, as well as because these copies are and must be looked upon as Office vouchers.

Such is the opinion of the Accountants Office but the General Manager will be pleased to decide what he may deem expedient.

And I have the honor to transmit it to you in regard to the aforementioned report, advising you at the same time that this General Management entirely agrees with the opinion given in the above decision, but your Department will decide upon what, under the circumstances, it may deem most expedient.

The President of the Republic having giving a similar opinion I have the honor to transmit it to you, in answer to your communication No. 1,281 of 6th, ultimo.

Which I communicate to you for your information and consequent ends.

Liberty and Constitution.—Mexico, 19th October 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at. . . .

Department of Fomento, Colonization and Industry of the Republic of Mexico.—3rd. Section.—Circular No. 16.—As the case has appeared that some of the owners of mines are not in the possession of the respective original titles, owing to their having been mislaid, nor are they to be found in the archives received by the Mining Agencies from the exterior Deputations, the President of the Republic, in order to avoid the detriments that might arise to the owners from not presenting said titles within the time specified by the Treasury Law as to mining imposts in Article 2 and in Article 3 of the Regulations, has decided that reference be made to Congress who issued the law which was approved on the 31st. ultimo. Mining owners, finding themselves in the circumstances mentioned, should petition the respective Mining Agency for the ratification of the mining concession which they may have, or wish to preserve, and said petitions should go through the same course as if it referred to a new concession on public lands, without any other modification than that of making a note in the petition to the effect that it is desired to remedy the want of a title to the mining concession which the owner had acquired prior to the new law.

Which I communicate to you for your information and consequent ends.

Liberty and Constitution. Mexico, November 11th. 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at. . . .

Department of Fomento, Colonization and Industry of the Republic of Mexico.—5th. Section.—Circular No. 17.—This Office having consulted with the Treasury as to stamps on the copies of nominations of experts, the latter Office has replied as follows:

«In answer to communication No. 2,945 of the 5th. instant from your office stating that various Mining Agents had consulted you, as to whether the copies of the nominations given to experts in accordance with annex A, paragraph XXXI, article 6 of the Stamp Law in force, which expressly refers to titles and nominations, and none of the other annexes referred to in said communication can be applied in this case.»

Which I communicate to you for your information and consequent ends.

Liberty and Constitution. Mexico, November 12th. 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at. . . .

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 18.—Under date of the 2nd. instant the Treasury advises this Office as follows:

«In answer to a telegraphic inquiry from the Chief of the Treasury in the State of Zacatecas, as to whether the manifestations, soliciting reductions of *pertenencias*, presented to the Mining Agent, should be stamped, this Department has to-day replied by wire:

«Requests for reduction of mining *pertenencias* are subject to stamp of 50 cents per sheet.»

Which I communicate to you for your information.

Liberty and Constitution. Mexico, November 13th. 1892.—*M. Fernández Leal*.—To the Mining Agent of the Department of Fomento. . . .

CIRCULAR NO. 19, VOID.

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 20.—The Mining Agent at Zimapan, State of Hidalgo, has addressed the following inquiry to this Office.

Some miners in this District, complying with the prescriptions of article 3 of the regulations of the law of imposts on mining, and Circular No. 9 of the 30th of August last, have presented their original mining titles for revision to this Agency. Several of them have supplied the necessary stamps to legalize their titles, but the greater number of the miners decline to supply the stamps and even demand the return of the titles, stating that the Legislative Chambers have voted a law, proroguing the presentation of such titles until the 30th of June 1893. In view of the foregoing, I request you to advise me, whether I am to return the titles and other documents presented, to the interested parties, or whether I am to exact the corresponding stamps, in view of the fact that the aforesaid documents have already been filed and revised in this Agency:"

The foregoing inquiry was referred to the Treasurer, who gave the following decision:

"This Office has taken due note of your dispatch No. 3,681, 3rd. Section, of the 7th instant, in which you enclose the inquiry received from Mr. Jesus Cervantes, acting Mining agent at Zimapan, Hidalgo, and in answer I have the honor to inform you, that the extension of time, granted by the law of the 31st of October last for the presentation and registration of mining titles, is only applicable to cases where mine owners were undoubtedly unable to make the presentation earlier; and for this reason the Mining Agent at

Zinapan should proceed in accordance with the steps laid down in the law of the 6th of June last and its Regulation, as well as in the Circular of the 1st. instant."

Which I communicate to you for your information and consequent action.

Liberty and Constitution. Mexico, November 15th 1892.—*M. Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Department of State and Office of the Treasury and Public Credit.—Mexico.—3th Section.—Desk No. 2. —In sending you copies of the decree issued by the Congress of the Union under date of October 31st. last, in which the time fixed by the law of June 6th 1892 for the presenting for the registration of mining titles, is extended, and the rates assigned to iron and mercury mines, are modified, I, in order to comply with the desires of the President of the Republic, communicate to you following resolutions:

1. When, by virtue of the exemption, granted by Article 2, the declaration alone is presented, the Offices of the Treasury will be careful to cancel the respective stamps on the principal copy, making the corresponding registration and entry, and they will forward the duplicate to this office, together with the report required, as per the regulations of June 30th. last. The stamped copy will remain in the possession of the offices of the Treasury, in order that, on the presentation of the original titles, they may be compared and rectified with the declaration made the Department of the Treasury being duly informed should there be any discrepancy.

2. On making the note on the titles that they have been registred an annotation will also be made to the effect that the corresponding stamps have been cancelled on the copy of the declaration which accompanies said title.

3. On receiving the declarations mentioned in Articles 2 and 3 of the law of October 31st. last the Offices of the Treasury will exact the payment of the first two thirds of the annual impost, delivering to the payer a certificate of the payment, which will be used to claim, in exchange, from the corresponding Stamp Office the voucher designated in Article 22 of the Regulations of June 30th., with the stamp corresponding to the two thirds paid, duly cancelled.

4. When it is a question of reducing or rectifying grants designated in previous titles, the payment of the mining impost will be calculated according to the measurements stated in the original titles, up to the date of their modification, and after such date according to such measurements as may be made, with the understanding that the payment of the impost is obligatory on all mining concessions from the 1st. of July of the present year onwards.

Mexico, November 1st. 1892.—*Romero*.—To

Department of Fomento, Colonization and Industry of the Republic of Mexico.—3rd. Section.—Circular No. 21.—In order to prevent the absence from the Mining Agencies of the officials under whose charge they are, and as it has happened that some of the Agents have absented themselves temporarily without giving the corresponding advice to this office, it is decided that in future, when Agents have to absent themselves for more than eight days, they may do so by previously calling in the respective acting Agent and giving due advice to this Office. Should a longer absence be necessary they will first have to solicit the permission of this Office, indicating the reason for such absence, and the time needed, so that a corresponding decision may be taken.

Which I communicate to you for your information.

Liberty and Constitution. Mexico, Noviembre 20th 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at

Departamento of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 22.—This Office having inquired of the Treasury as to whether the Acting Mining Agents are obliged to provide themselves with the corresponding credentials, said Department answered as follows:

"As a result of your inquiry made to this Department in communication No. 3,572 of the 29th of October last, as to whether acting Mining Agents are obliged to provide themselves with credentials, notwithstanding the fact that they officiate and receive salary only when the incumbents are accidentally prevented, through illness or leave of absence, I beg to inform you that said Agents are not obliged to provide themselves with credentials, in view of the circumstance that the salary they draw is accidental and the time during which they officiate is very short, not exceeding two months."

Which I communicate to you for your information.

Liberty and Constitution. Mexico, Noviembre 28th 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento to

Department of Fomento, Colonization and Industry of the Republic of Mexico.—Third Section.—Circular No. 23.—As it is necessary that this office should have exact information as to the petitions for reduction or rectification of grants that have been, or may be presented to you, you should give details of each petition; when the respective steps are terminated, explaining in said details, as to which case, provided for

in Circular No. 11 of the 3d. of September last issued from this office, the petition in question refers and also as to what steps may have been taken up to the time of sending in the report.

Liberty and Constitution. Mexico, January 10th. 1893.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento of

CIRCULAR No. 24, VOID.

Department of Fomento, Colonization and Industry of the Republic of Mexico.—3rd. Section.—Circular No. 25.—As it has often happened that in the copies of documents sent by the Mining Agents to this Office, in accordance with article 37 of the Regulations of the ruling law, the copy of the extract, referred to in article 21 of the Regulations, is omitted, mention being merely made of it in the documents, this Office, taking into consideration the importance of strictly observing the provisions regarding the framing of the extract contained in above Article 21 of the Regulations, requests you not to make the omission referred to, and on sending in the copies of the documents to include the copy of the respective extracts, subsequent to the proof of the nomination of the expert having been accepted, as laid down in the aforesaid Article 21 of the Regulations.

Liberty and Constitution. Mexico, February 21st. 1892.—*Fernández Leal*.—To the Mining Agent of the Department of Fomento at

CIRCULAR No. 26, VOID

Department of Fomento, Colonization and Industry of the Republic of Mexico.—3rd. Section.—Circular No. 27.—The Treasury Department in its communication No. 5,811 of the 3d instant writes as follows to the Department of Fomento.

“Some Mining Agents receive and retain on deposit amounts that are destined for the payment of the annual mining impost, for which they have not received any authority, and as this practice is contrary to the ruling regulations, and may cause annoyances and difficulties not only to the payers but also to the offices delegated to collect said impost, I beg to advise you that you will please inform said Agents, in case your office is of the same opinion as that of Treasury, that although they, by circular No. 19 of August 15th 1892, are authorized to receive the mining titles that may be presented to them, thus to a certain extent exercising the duties of the Treasury Office, this authority, does not comprise the collection of the mining impost, and for such reason they should abstain from receiving, in this respect, amounts referred to in said circular and in the law of October 31st, limiting themselves to exact from the interested parties that they justify having deposited in the respective Treasury or Stamp Office the amount of two thirds corresponding to the present fiscal year, for the purpose of taking the necessary steps with the declarations and titles that they may receive in virtue of said circular.”

Which I transmit to you for your information requesting you, in instances where the parties interested wish to deposit the sums referred to in the above circular of the Department of the Treasury, you will abstain from receiving such amounts and give the interested persons the corresponding explanation on the subject.

Liberty and Constitution. Mexico, April 12th, 1893.—*M. Fernández Leal*.—To the Mining Agent of the Department of Fomento at

(Circular No. 28 relates to the sending of a copy of Federal stamp law to the Agent of the Secretary of Fomento, for which reason it is not inserted here.)

Department of Fomento, Colonization and Industry of the Mexican Republic.—Section 3rd.—Circular No. 29.—Cases having arisen in which persons have expressed a desire to reduce the number of Mining Claims which they had solicited, before the expiration of the term of four months which the Law grants for the investigation, in which cases it appears there is no necessity of the interested party withdrawing his first petition in order to present a fresh one, the President of the Republic, to whom I reported the question, has seen fit to rule. That if the petition for reduction is presented before the expert has made the measurements the Agent will notify the latter, in order that he may make those measurements in accordance with the new wishes of the interested party. Should the expert have already presented his plans, the Agent will make a fresh appointment, so that at the expense of the interested party and within a period which shall not exceed that wanting to complete the four months, the expert may make the reduction applied for.

In both cases the Agent will take note of this reduction in the records and will notify the public thereof will an advertisement in the Official periodical of the State, and on the notice board of the Agency, the interested party covering the expense of the advertisement in the periodical.

Liberty and Constitution. Mexico, November 20th. 1892 (Signed).—*Fernández Leal*.

Department of Fomento, Colonization and Industry of the Mexican Republic.—Section 3rd.—Circular No. 30.—In order to avoid in the future, the abuses that are frequently being committed in connection with the reduction in the number of mining claims that have been previously solicited and are in course of investigation, as well as the withdrawals that are presented during the investigations, which abuses consist in the fact that simultaneously with the petitions for reduction or withdrawal, persons who are in collusion with the petitioners present petitions for the concession of free ground before the reduction or withdrawal reaches the knowledge of the public, thus preventing *bona fide* miners from soliciting concessions; the President of the Republic, acting under the authority to regulate and fix periods, which was granted him by the Law of the 4th. of June 1894, has been pleased to rule as follows:

1. Whenever it is desired to reduce the number of the claims already petitioned for, and during the term of investigation of the same, it will be done in accordance with the provisions of circular No. 29 of this Department, of the 20th. of November 1893; on the understanding that the period during which the notice of reduction must remain on the Notice board of the Agency, shall be fifteen days.

The new petitions for concessions on the ground that is thus left free, which may be presented in accordance with the law and its Regulations, shall only be received and registered after the expiration of the above term.

2. The party interested in the reduction will be bound to present to the Agency, before the investigation of his petition is terminated, the numbers of the Official Periodical, in which the respective publication appears, as referred to in the concluding part of Circular No. 29.

3. In the case of a voluntary withdrawal, which can be admitted through the non-expiration of the periods required by the Regulations without the legal requisites having been fulfilled, the Agents will proceed to publish that withdrawal on the notice board for the term of fifteen days, and until this term has elapsed, no fresh petitions which may be presented in accordance with the Law and Regulations for such free ground, will be admitted and registered.

4. Both in the cases of reduction as well as voluntary withdrawal, should the respective petitions be presented without the previous investigations, having complied with all the requisites of the Law and Regulations, the Agents will record that circumstance in the records, will not allow the petitions to go any further, and at the expiration of the proper term, will forward the papers to the Department of Fomento for the proper decision to be given.

Liberty and Constitution. Mexico, March 1st. 1891.—*M. Fernández Leal*.—To the Mining Agent of the Department of Fomento.

Department of Fomento, Colonization and Industry of the Mexican Republic of Mexico.—Section 3rd.—Circular No. 31.—In view of the difficulties that have arisen in the return of the stamps to the petitioner for mining concessions, when those petitions are not approved and the respective titles not issued, or when the petitioners withdraw, the President of the Republic has seen fit to give orders, that from the date on which this Circular is received, the Agents will not ask or receive from the petitioners, the stamps which are to be affixed on the titles to the mines for which petitions are under investigation, and the Agents will also warn the petitioners that they are not to forward to the Department, the stamps required to legalize the titles to the mines, as the stamps will be demanded by this Department from the petitioners, either directly or through the Agents whenever the investigation is closed and the issue of the respective titles is ordered, thus modifying the provisions of Art. 35 of the Regulations.

And I communicate the same to you for its compliance.

Liberty and Constitution. Mexico, September 1st. 1891.—*Fernández Leal*.

Department of Fomento, Colonization and Industry of the Mexican Republic.—Third Section.—Circular No. 32.

Cases frequently arise, in which petitions for ground are filed in the Mining Agencies with the deliberate object of preventing others from soliciting the same ground, and for this purpose the interested parties so word them, that they ask for a large number of claims or without designating the number, make the petition cover the entire area of a municipality, district or jurisdiction of the Agency, thus abusing the ample liberty allowed by the Law with regard to the number of claims; but without fulfilling, in those petitions, the explicit provisions of Art. 16 of the Regulations, of the law of the 4th of June 1892, seeing that they do not clearly specify the number of claims solicited, and even if they do, they do not express their situation on the ground, nor in the respective Municipality. These petitions are worded so as to cover townlands, mines which already have owners and are working, or others that are already solicited, and they omit to specify the mineral substance which is contained in them as well as the nature, formation and situation of the mineral vein, as they ought to do, in order to prove that the claims so solicited come under the provisions of Art. 3 of the above mentioned Law of the 4th of June 1892, which refers to special concessions. The method adopted by these petitioners is that of making a considerable reduction in the number of the claims during the course of the proceedings; but at the same time getting some one else to petition for the abandoned ground, so that he will in his turn follow the same methods. It also frequently happens that the petitioners for mining concessions in such cases, refuse to give any explanations to the Mining Agents, on the pretext that the latter are

bound in compliance with the provisions of the final part of Art. 15 above mentioned, to register their petitions in spite of their deficiencies and the refusal to give explanations, thus evidently showing that the petitioners do not understand the real significance of Art. 15 as the authority which is given to the Mining Agents to ask for explanations without obliging the petitioners to answer, must be understood as only applying to those cases in which, notwithstanding the fact that the petition complies with all the above requisites, the Agent may still have some doubt, but in no way implies, that the petitions for concessions should omit any of the requisites explicitly demanded by the above mentioned Articles.

In view of these infringements of the Law and its Regulations and with the object of preventing these abuses, which not only work to the injury of the real miners but also to that of the Mining industry in general, the President of the Republic has been pleased to order, that without in any way limiting the liberty granted by Law for soliciting any desired number of claims, Art. 15 of the Regulations of the Law of the 4th of June 1892, should be further explained as follows:

1st. Before petitions for concessions that are filed in Mining Agencies can be admitted to Registry and investigation, it is an indispensable requisite that, in accordance with Art. 3 of the Law of the 4th of June 1892 and Art. 15 of its Regulations, such petitions shall clearly and explicitly state the number of claims that are solicited, the form they are desired to have in the ground, their situation in the Municipality they belong to with the most notable points of identification specifying also the mineral substance which it is proposed to extract and the nature, form and situation of the vein in which it is found, stating whether the ore is found in a vein, bed, places or in any other form; clearly stating the place or places the territory of the respective Agency in which the outcrop can be recognized, with all the details that can assist an identification. In those cases in which the petitions for concession do not duly comply with the requisites enumerated in this paragraph, they cannot be admitted or registered.

2nd. If, notwithstanding the compliance with these requisites, the petition should not be clearly worded in the opinion of the Mining Agent, he will question the petitioner and take down his explanations on the petition itself, on the duplicate and in the Register of the Agency in the presence of the interested party; but should the latter either be unable or refuse to give them, and provided that the petition as above said, fulfils all the requisites above mentioned, the Mining Agents will receive and forward the petition simply noting on it as well as on its duplicate and in the Register, in the presence of the interested party, the explanation requested and the answer of the petitioners, and on forwarding the records he will call the attention of the Department to this note, in order that it may be taken account of in the Revision.

3rd. The petitions for concession which ask for interrupted claims, will be received, provided that such claims are within the same Municipality and on the same lode, as in the event of their being in different municipalities or on different lodes, separate petitions must be presented for those which relate to each lode or Municipality, and in both cases, the petitions can only be admitted when they comply with the requisites referred to in paragraph 1st.

4th. The Mining Agents will under their own responsibility see that all these provisions are duly complied with.—Liberty and Constitution. Mexico, October 31 1891.—*Fernández Leal*.

Liberty and Constitution. Mexico, October 31 de 1899.—*Fernández Leal*.—To

Department of Fomento, Colonization and Industry of the Mexican Republic.—Third Section.—Circular No. 33.

In accordance with Art. 31 of the Regulations of the Law of the 4th of June 1892, in case of opposition the Mining Agents of the Department of Fomento will deliver the records to the interested parties in order that, under their responsibility and within the term fixed for that purpose by the Agent, they may present them to the Department of Fomento for examination and decision. As cases frequently arise in which, in spite of the term specified for that purpose by the Agent, the interested parties, probably under the belief that they can dispose of an indefinite period for that purpose, do not present the documents in either the respective Court or in the Department of Fomento, but keep them in their possession for a long time and for speculative purposes, to the prejudice of the miners who act in good faith, and of the Government, besides rendering themselves liable to the penalties referred to in Art. 19 of the Regulations, the President of the Republic has seen fit to issue the following explanations for the purpose of correcting such abuses:

1st. The Petitioners for Mining concessions to whom the Mining Agents may deliver the original records for presentation to the local Court of First Instance, in accordance with the provisions of Art. 31 of the Regulations of the Law of the 4th of June 1892, or the other persons to whom the copy of the records may be delivered in accordance with the provisions the final part of Art. 34 of the same Regulations, and who may not make such delivery within the term specified by the Mining Agent and thus bring themselves under the provisions of Art. 19 of the Law of the 4th of June 1892 and Art. 36 of the Regulations, will suffer the penalty established by said articles for their delay, and the Department of Fomento will make the respective declaration, which will be published on the Notice Board of the corresponding Agency, so that any other person may solicit the same concession.

2nd. On delivering to the petitioner, either the original records for presentation to the respective Court, or the copy for presentation in the Department of Fomento, the Mining Agents will always take care to specify a prudent term, as may appear to them necessary for such delivery, taking into account the distance

of the place in which the Agency is established to the respective Court, if it is not in the same locality, or to the Capital of the Republic, as the case may be, as well as the greater or less facility of communication.

3rd. On the same day on which the Mining Agent may deliver to a petitioners the original records of his petition or the copy thereof, he will notify the respective Judge or the Department of Fomento as the case may be, by registered mail, giving the name of the petitioner and of the mine, the situation of the latter, number of claims solicited and the term granted for delivery of the document.

4th. If on the expiration of the term allowed to the petitioner for delivery of the records to the Court of First Instance, the Agent Does not receive advice of the arrival of the documents at their destination, will ask on that same day and if possible by telegraph, whether the Judge has received the records, and in the event of his receiving a negative answer or none at all, he will at once notify the Department of Fomento, giving all the details of the records in question, so that the Department, in the event of their not having been delivered to the Judge, may make the declaration of default which is referred to in paragraph 1, and commit the case to the competent District Judge, in order that he may recover the original record.

5th. If, on expiration of the term granted to the petitioner for delivery of the record in the Department of Fomento, it should not have reached that office. the respective declaration of default will be made.

6th. The Mining Agents will strictly comply with these rulings, as far as they relate to themselves, and will be held responsible for their non-compliance.

Liberty and Constitution. Mexico, November 1st. 1899.—*Fernández Leal.*—To . . .

DECREES.

Department of State and Office of the Treasury and Public Credit.—Mexico.—8th. Section.—The President of the Republic has been pleased to send me the following decree:

«*PORFIRIO DIAZ Constitutional President of the United States of Mexico, makes known to their inhabitants:*

“That the Congress of the Union has been pleased to decree the following:

The Congress of the United Mexican States decree:

Art. 1st. The time indicated in Article 2 of the law of June 6th. last is extended to June 30th. 1893, for the owners of mines to present their titles in the respective Treasury Offices, with the object of entering them in the register of mining properties, the stamps prescribed in said law having to be affixed to them.

Art. 2nd. In the absence of original titles, it will be sufficient to present the last transfer of the property; but in case not even the latter is it hand, the parties interested must then, in order to enjoy the advantages of the extension, present a declaration in duplicate before the 31st of December next, in which, manifesting to speak the truth, they will declare the number of hectares comprising the property («*pertenencias*») and on one of the declaration they will affix stamps at the rate of \$10 per hectare. They must also make the payment of two thirds of the annual impost, in the from laid down in the regulations of the Department of the Treasury.

Art. 3rd. The copy of the declaration, on which the stamps are affixed will be returned to the parties interested after the titles have been presented, within the time specified by this law, and in the manner laid down in the regulations, and on being claimed, duly registered, at the respective Treasury Office. In case it should be a question of titles issued by the Department of Fomento, the stamps to be affixed will be supplied by the Treasury, free of charge, for an amount equal to those on the declaration referred to in Article 2.

Art. 4. Extension is also given, but only to such mine owners as comply with the requirements established in the preceding Articles, of the time fixed for the imposing of fines in the first two paragraphs of Article 6 of the law of June 6th last, and said extension will be until the 1st. of July of 1893.

Art. 5. The rates fixed in Articles 3 and 4 of the law of June 6th of the present year, for iron and mercury mines and deposits, are modified, the value of the stamps to be affixed on the title to the property, according to the number of hectares, being reduced to one dollar, and the annual impost to \$1.50 per each *pertenencia* or hectare.

Art. 6. The Executive is authorized to make such modifications in the laws of the 4th and 6th of June last as he may deem expedient for the improvement and development of the mining industry.”

Justino Fernández, President of Congress.—*R. Dondé*, President of Senate.—*Rosendo Pineda*, Secretary of Congress.—*Carlos Quaglia*, Secretary of the Senate.

In view of wick, this decree is ordered to be printed, published and circulated.

Given at the Palace of the Executive of the Union, in Mexico, October 31st 1892.—*Porfirio Díaz.*
—To the Secretary of State, and Office of the Treasury and Public Credit, Mr. *Matías Romero.*

Which I communicate to you for your information. Mexico, October 31st 1892.—*Romero.*

Department of Treasury and Public Credit.—8th. Section.—Desk No. 2.—The President of the Republic has been pleased to remit me following decree:

PORFIRIO DIAZ, Constitutional President of the United States of Mexico, to the Inhabitants thereof, be it known:

That, by virtue of the authority granted to the Federal Executive in article 6 of the law passed by the

Congres of the Union on October 31st. last, for the purpose of making the modifications in the laws of the 4th. and 6th. of June 1892, which he may deem necessary for the improvement and development of the mining industry, he has been pleased to decree:

Art. 1. The time fixed, in Articles 4 and 5 of the law of June 6th. 1892, for the payment of the annual mining impost, will be reckoned from the 1st of November of the present year, and not from the 1st. of July last, the date indicated in said Articles.

Art. 2. The mine owners, who may have paid the third, corresponding to the 1st. of July to the 31st. of October 1892, will be reimbursed the amount, in stamps of the mining impost, which will be handed them by the Stamp office in which the payment may have been made, they being affixed and cancelled on the respective voucher corresponding to the third of a year from November 1892 to February 1893 inclusive. To persons who may have made the payment for such period the said reimbursement will be made in order to be applied to the third of a year corresponding to March to June 1893.

Art. 3. Concessionaires of mines, who may have solicited and obtained, subsequent to July 1st. 1892, a reduction of their pertenencias, will, in virtue of the exemption of the first third of the present fiscal year, made by this decree, be entitled to reimbursement of the excess they may have paid on mining titles, and on the annual impost as determined in the preceding Article.

Art. 4. Concessionaire of mining zones, who, renouncing the rights granted them by their contracts may have chosen to abide by the new law, should present their titles and new declarations in accordance with Article 3 of the Regulation of June 30th last, within the time of two months from the date of the present decree, the annual payment being computed from the 1st. of November 1892, or from the date on which the Department of Fomento approves the option, should the latter be subsequent to the date mentioned. In virtue whereof this decree is ordered to be printed, published and circulated.

Given at the Palace of the Federal Executive Power in Mexico, on December 31st. 1892.—*Porfirio Díaz*.—To the Secretary of State and Office of the Treasury and Public Credit, Lic. Matias Romero.—Present.—And I communicate it to you for your information. Mexico, December 31st. 1892.—*M. Romero*.

Department of Fomento, Colonization and Industry of the Mexican Republic.—Section 3rd.—The President of the Republic has been pleased to address me the following decree:

PORFIRIO DIAZ, Constitutional President of the United States of Mexico, to the inhabitants thereof know ye:

That the Congress of the Union has seen fit to decree as follows:

The Congress of the United States of Mexico decrees:

Sole Article. The Executive is authorized, during the period of one year from the date of the promulgation of the present law, to make contracts for the exploration and working of gold mines and auriferous placers, in accordance with the ruling minings laws, and the following clauses by which said laws are amended:

I. The contracts will have the form of a concession which will be granted freely by the Executive, and under the supposition that sufficient data will be collected to prove that gold exists within the exploration zone.

II. For the purposes of this law all deposits of gold, whether alluvial or not, will be considered as gold mines, as well as such deposits in which the gold is found mixed with another mineral in such proportions that the commercial value of the gold is in excess of the value of the other minerals.

III. No concern will be looked upon as a gold mine unless the average of the minerals, assisting in all the claims forming the company, shall contain the minimum quantity of gold mentioned in the foregoing clause.

IV. As soon as the nature of the mine changes, in such wise that the average referred to in the foregoing clause is not obtained, the contracts, made in conformity with this law, will be rescinded.

V. In every contract the perimetre of the exploration zone will be clearly defined.

VI. Within the perimetre of such zones the concessionaires can designate and acquire as many mining claims and surpluses of such as can be located on the unoccupied land, or they can indicate as incorporated in the zone, the claims and surpluses of such belonging to the said concessionaires prior to the date of the contract, as well as those which they may acquire later by purchase or other legal title.

VII. The concessionaires will procure exploration permits which will be subject to regulations of the ruling law and any other person or company is prohibited from making another exploration for any kind of metal in the same zone; such permits will however be given for the non-prorogable time of six months and at the expiration of such time, and during the two subsequent years, neither the concessionaires nor any other person, can obtain one of these exceptional exploration permits.

VIII. The concessionaires may introduce into the Republic free of import duty the machinery, tools, utensils and apparatus necessary for exploring and working, as well as the construction material necessary for the mines and metallurgical offices with the understanding that they must in each case make a previous arrangement with the Treasury Department and without prejudice to the regulations which such Department may decree.

By the fact of the concessionaires selling, without the permission of the Government, all or a portion of what they import free of duty, in accordance with the present clauses, they will loose what they may have

sold as well as the privileges granted in their contract, unless the sale has been made owing to bankruptcy or liquidation.

IX. The concessionaires will enjoy a reduction of the annual mining tax during ten years, in such wise that, paying in the first year only one tenth of the existing tax that may rule in that year.

X. The concessionaires will, during ten years, be exempted from all federal tax, excepting that fixed in the preceding clause, taxes payable in stamps and coinage, mintage and assay taxes.

XI. The concessionaires will, during the first three years, invest a capital of at least \$500,000 in their undertaking which shall be increased to \$1,000,000 during the five following years.

XII. The concessionaires will, within the time and in the manner laid down in the contract, present plans, mineral and descriptive samples, and geological specimens as a result of the respective exploration.

XIII. The concessionaires will allow the presence of an inspecting engineer, nominated and paid by the Executive, at the works of exploration and development.

XIV. The concessionaires will guarantee the fulfilment of their obligations by a deposit of at least \$10,000 in bonds of the public debt, which they will make on signing the contract, and which cannot be retired until they have given proof of having invested \$200,000 of the capital referred to in clause II. If the deposited bonds should be entitled to interest the depositors may in due course retire the coupons for collection.

XV. The exemption from taxes referred to in clauses 9 and 18 does not include the exploiting of alluvial gold, because in such case the concessionaires, if they are the discoverers, will pay a third part of the taxes that may be in force during the time the exploiting lasts.

XVI. The concessionaires will, within two years of the contract, erect a metallurgical establishment, capable of working at least four hundred tons of ore per week or any other work which, in the judgment of the Department of Fomento, is equivalent in value to said establishment.

And therefore, I order that it be printed, published, circulated and duly complied with.

Given in the Palace of the Executive in Mexico, on the Fourth day of June eighteen hundred and ninety four.—*Porfirio Díaz*.—To the Engineer Manuel Fernández Leal, Secretary of State and of the Department of Fomento, Colonization and Industry.

And I communicate the same to you for your information and other purposes.

Liberty and Constitution. Mexico, June 6 1894.—*Fernández Leal*.

Department of Fomento, Colonization and Industry of the Mexican Republic.—Section 3rd.—The President of the Republic has been pleased to address to me the following decree:

PORFIRIO DIAZ, Constitutional President of the United States of Mexico, to the inhabitants thereof, Know ye:

That the Congress of the United States of Mexico decrees:

Art. 1. On the conclusion of the peremptory term of three months which is specified by Art. 13 of the Mining Law for the granting of claims exclusively to the explored, no new exploration permits will be issued for the ground that has been explored, nor will notices be allowed for such exploration until after the lapse of six months, during which the ground will remain free for mining claims to be solicited therein. In those Mining Districts in which claims have already been granted and taken possession of, the exploration shall only be made in ground distant 200 metres from the boundaries of those claims and in abandoned mines.

In all these cases, the explorer must clearly and exactly state the situation and boundaries of the ground.

Art. 2. The Mining Agents of the Department of Fomento must publish on the notice board of the Agency, a copy of the permit, notification or administrative ruling referred to in the same Art. 13 of the Mining Law, specifying at the end of said copy the exact dates on which the exploration is to commence and terminate.

Mexico, 10th. December 1897.—*R. Herrera*, Vice President of Congress.—*Mariano Martínez de Castro*, Vice President of the Senate.—*Alonso Rodríguez Miramón*, Secretary of Congress.—*A. Castañares*, Secretary of the Senate.

And therefore I order that it be printed, published circulated and duly complied with.

Given in the Palace of Executive in Mexico on the 13th. day of December 1897.—*Porfirio Díaz*.—To Mr. Manuel Fernández Leal, Secretary of State and of the Department of Fomento, Colonization and Industry.

And I communicate the same to you for your information and other purposes.

Liberty and Constitution. Mexico, September 3rd. 1897.—*M. Fernández Leal*.

Department of Fomento, Colonization and Industry.—Section 4th.—The President of the Republic has been pleased to address to me the following decree:

PORFIRIO DIAZ, Constitutional President of the United States of Mexico, to the inhabitants thereof, know ye:

That the Congress of the Union has seen fit to decree as follows.

The Congress of the United States of Mexico decrees:

Art. 1. From the first day of July of the present year, stamps of the class required by Law, at the rate of Two Dollars and fifty cents for each claim, will be affixed and cancelled on all titles to mines which do not carry gold, silver or platinum, and are liable to the payment of the Federal Mining Tax; and from

and after said day, those mines will only be liable to the annual tax at the rate of two dollars and fifty cents for each claim.

Art. 2. The mines referred to in the preceding article will pay the same tax as those of gold, silver and platinum, when the ores therein contained carry gold, silver or platinum in any proportion.

Should the proportion of these precious metals not exceed in any part of the vein or ledge, the limit specified in Art. 11 of the Law of the 27th., of March 1897,* the Executive may reduce the annual tax to five dollars per hectare on the claims of any one owner which exceed fifty but do not come up to one hundred, and to two dollars and fifty cents per hectare on the claims which exceed one hundred.

Art. 3. The incorrectness of the data furnished by the tax payer with regard to the payment of the tax, as well as the omission of the timely notice that the ores extracted from the mine contain gold, silver or platinum, will render that miner liable to a fine equivalent to three times the tax that he ought to have paid, from the date on which the false information was furnished or the notice ought to have been given, and on the understanding that in no case shall the time for which the fine is levied be less than one year.

Art. 4. Art. 5, of the Law of the 31st. of October 1892, will be repealed from and after the 1st. of July of the present year; but during the fiscal year of 1898 to 1899 the iron and quicksilver mines now in operation or to which titles have been issued before this law comes into force, will continue paying the tax specified in Art. 5 of said Law. After the expiration of said financial year, the iron and quicksilver mines will pay the taxes specified in the preceding articles.

S. Camacho, President of Congress.—R. Dondé, President of the Senate.—Daniel García, Secretary of Congress.—A. Castañares, Secretary of the Senate.

And therefore I order that it be printed, published, circulated and duly complied with.

Given in the Palace of the Executive in Mexico, on the 3rd day of June 1896.—*Porfirio Díaz*.—To the Secretary of State and Department of the Treasury and Public Credit, Lic. José I. Limantour.

And I communicate the same to you for the necessary purposes.

Mexico, June 3rd. 1898.—*J. I. Limantour*.—To the Secretary of Fomento.

I transcribe it to you for your information and compliance.

Liberty and Constitution. Mexico, 3rd. of June, 1898.—*Fernández Leal*.

Department of Fomento, Colonization and Industry of the Mexican Republic—Third. Section.

The President of the Republic has been pleased to address to me the following decree:

PORFIRIO DIAZ, Constitutional President of the United States of Mexico, to the inhabitants thereof, know ye:

That the Congress of the Union has been pleased to decree as follows:

The Congress of the United States of Mexico decrees:

Art. 1. Whenever, in accordance with Art. 13 of the Law of the 4th. of June 1892 and with notice, the permit or petition referred to in Arts. 10, 11 and 12 of the Regulations of the same Law, an expert report is presented to the respective Mining Agent of the Department of Fomento, in which, under the responsibility of the author thereof, the existence of under ground gold placers is indicated, the term of exploration will be extended up to one year, the investigations will be carried out as well as the explorations, in accordance with the Law of the 4th of June 1892 and its Regulations and with the Law of the 14th of December 1897; except with regard to the depth of the shafts, if they are used in explorations which may be such as is necessary.

For the purposes of this Law, the underground gold placers will be understood as being only those which are found at such a depth that their operation demands underground workings of a real mining character.

The placers which, even when covered by alluvial earth or other rocks, are not at such a depth as to require underground workings, but are operated by removing the earth from the surface, will not be considered as coming under this Law, and consequently, the explorer of the same will be subject to the provisions of the Laws above mentioned.

Art. 2. The extension of the term for exploration in the case of the underground gold placers referred to in the preceding article, will not prevent the exploration within the limits of the zone, and in accordance with the Law in force, of other lodes containing ores of a different character and for the purpose of soliciting concessions.

M. Peniche, President of Congress.—Ignacio Pombo, President of the Senate.—Lorenzo Elizaga, Secretary of Congress.—A. Castañares, Secretary of the Senate.

And therefore, I order that it be printed, published, circulated and duly complied with.

Given in the Palace of the Executive, in Mexico, on the 13th day of November 1899.—*Porfirio Díaz*.

To the Engineer Manuel Fernández Leal, Secretary of State and of the Department of Fomento, Colonization and Industry.

And I communicate the same to you four your information and compliance.

Liberty and Constitution. Mexico, November 13, 1899.—*Fernández Leal*.

* The Article cited from the Law of the 27th of March 1897 reads as follows: Art. 11. The ores which contain less than two hundred and fifty grams of silver or ten grams of gold per ton will be exempted from the payment of the taxes and dues imposed by this law, and in cases of an alloy of the two metals the proportion between the two limits shall be taken into account.

DEPARTMENT OF JUSTICE AND PUBLIC INSTRUCTION.

SECTION FIRST.

The President of the Republic has been pleased to address to me the following decree:

"PORFIRIO DIAZ, Constitutional President of the United States of Mexico, to the inhabitants thereof, know ye:

That the Congress of the Union has seen fit to address to me the following decree:

The Congress of the United States of Mexico decrees:

Article first. The railroad, mining and public works companies as well as all other joint stock companies will be allowed to issue, subject to this law, obligations or bonds with or without special guarantees.

These bonds or obligations will be considered, for all legal purposes, as personal property, even when guaranteed by mortgage; they will confer equal rights on their individual share of each bond-holder in the debt constituted by the contract which gives rise to the issue, which will nevertheless preserve the judicial character given to it by the laws.

Article second. The obligations may be issued either in a specific name or to bearer, and they will be subject all the provisions relating to the share of joint stock companies which are contained in the three first sections of Article 180 and in Articles 181 and 182 of the Commercial Code of the 15th of September 1889.

Article third. No agreement will be allowed for the obligations to be redeemed by drawings at any price above that of the issue at par, or with any premium or bonds, unless they comply with the following requisites:

I. That the interest payable to all the bond holders shall not be less than four per cent per annum.

II. That the sum which according to the contract is to be from time to time dedicate to the redemption of the obligations and payment of interest, shall be the same during the whole period stipulated for such redemptions.

Any bond-holder will have authority to demand the cancellation of the whole issue that may be made contrary to the provisions of this article.

Article fourth. The obligations may be issued by public subscription or in accordance with special contracts, which must always be recorded by public instrument.

When the obligations are issued by public subscription it must be preceded by the publication in the official periodical and any other in the place of residence of the Company, of a notice which will set forth:

I. The name, object and domicile of the Company, with date of the constitution thereof citing the deed of association or the records of the General Meeting by which it was organized.

II. The date of General Meeting of share holders in which the issue was decided on, or else a reference to the deed of association that authorizes such issue without the necessity of a resolution by the General Meeting.

III. The amount of the obligations previously issued, with an indication of their principal conditions respecting guarantees, interest and dates of redemption.

IV. The conditions of the subscription, one of which must be, that the subscribers at once pay into some Bank or commercial house, at least ten per cent of the amount subscribed for.

V. The number and nominal value of the obligations, the interest payable thereon and dates for such payment, as well as the dates, conditions and methods under which the redemption of the obligation is to be carried out.

VI. The purpose to which the proceeds of the issue are to be dedicated, whenever it is intended to present it as a guarantee or security for the debt.

VII. The special guarantees that are offered to the bound-holders.

VIII. A balance sheet of the Company, specially prepared in view of the issue of obligations.

IX. The amount that will annually be placed by the Company at the disposal of the representative of the bound-holders, for the payment of his own remuneration and the expenses incurred in the execution of his office.

This notice will be inserted in the "Subscription Lists," and in the event of any of the above requisites being omitted from said notice, the Courts will have power to declare the issue null and void, on petition of any of the bond-holders.

Article fifth. No issue of bonds shall be made for any sum larger than the assets show in the last approved balance-sheet; but nevertheless, companies will be allowed to issue bonds even in excess of such assets, when they represent the value or price of the property or securities whose purchase is contracted for and is the cause of the issue.

Article sixth. The debtor companies will convene the bond-holders in a General Meeting, within the thirty days following the date on which the subscription to the bonds is closed.

The call for such meeting must be published in the official periodical and in another one in the domicile of the Company, for at least eight days before the day on which the meeting is to be held, and it will specify the day, hour and place of the meeting.

The meeting will be held as legally opened, with an attendance of bond-holders who represent more than the half of the amount subscribed; but in the event of the non-attendance of a sufficient number of subscribers to obtain this representation, the call will be repeated under the same conditions as the first, and the meeting will be held, whatever may be the number of bond-holders present or the amount represented.

The President or Vice-President of the Company which makes the issue, will preside over the meeting and with the approval of the same, he will appoint a Secretary and two tellers from among the bond-holders present.

Each bond-holder will have a vote in the Meeting for each bond that he may have subscribed for, and the resolutions will be passed by a majority of the bonds present.

Article seventh. The objects of the Meeting referred to in the preceeding article will be as follows:

I. To prove that the entire amount of the bonds has been paid into some Bank or mercantile house:

II. To decide by a unanimous vote of the subscribers, and in the event of the whole of the bonds not being subscribed for, whether the issue shall be reduced to the amount already subscribed, always provided that the Company making the issue accepts such resolution.

III. To elect a General Representative for the bond-holders, who may be one of themselves or an outside person, or else to appoint a committee who shall represent the whole of the bond-holders.

IV. To approve the regulations to which the General Representative or Committee are to be subject, specifying the time that they are to continue in office, the remuneration, in the case of its being allowed, the way in which the temporary absence of the General Representative or member of the Committee is to be covered, and the regulations for the calling and opening of the General Meeting that are to be exercised by such meetings, and generally everything that relates to the joint interests of the bond-holders.

The offices of General Representative or member of the Committee, notwithstanding any stipulation to the contrary, are revocable.

Article eighth. The General Representative or Committee of the bond-holders, will have the following powers:

I. To execute in the name of the bond-holders, the contract in which their rights are set forth, always taking care that it is done by public instrument and registered in accordance with law.

II. To execute all other contracts and cancellations that may be necessary, in accordance with the stipulations and conditions of the issue, taking care that they are registered, whenever so required by law.

III. The provisions of this article shall not deprive the bond-holders of the right of proceeding individually and by executive summary suit for obtaining the payment of the coupons that may come due or of the principal due to each one by redemption, and the summary suit may be entered after proving the authenticity of the respective document by comparison with its original; but this requisite will not be required, if on demanding payment from the proper person, such document is not declared false.

IV. To call the General Meetings in accordance with the forms and conditions provided in the regulations.

V. To attend the General Meeting of the share-holders of the debtor Company with the right to take part in the discussion but not to vote; and likewise to inspect all the books and documents that are placed at the disposal of said share-holders. For this purpose he must be cited to the General Meeting in the same form as the share-holders.

VI. To represent the bond-holders, judicially, either in person or by attorney, in all matters that refer to the exercise of their joint rights.

The powers conferred by this article on the General Representative or the Committee of bond-holders, exclusively pertain to them and cannot be exercised directly by the bond-holders, except in the cases provided under Articles 3 and 4 of his law.

Article ninth. In the absence of any especial provision in the regulations referred to in Section IV of Article VII, the bond-holders representing at least a fourth part of the bonds subscribed for, will have authority to take judicial proceedings for the purpose of obliging the General Representative or Committee, to comply with their duty and demand that a General Meeting be called. This having been solicited, notice of the Meeting and of the order of the day will be issued at least three day after the petition, so that it can be held within the thirty days following.

Article tenth. In the event of the permanent absence of the General Representative or of any member of the Committee, his place will be filled in accordance with the provisions of the regulation referred to in Section IV of Article VII, and if for any reason it should be found impossible to proceed in that form, any one of the bond-holders may apply to the judicial authority in order that it may appoint a temporary Representative, who shall without delay call a General Meeting of the bond-holders, which will proceed to the election of a new Representative.

Article eleventh. The debtor Company shall have no power to dispose, either wholly or in part, of the funds proceeding from the issue of obligations until the General Meeting referred to in Article VI has been held and the instrument under which the rights of the bond-holders are secured, has been signed and registered by the General Representative or Committee of the bond-holders.

The Bank or Mercantile House with which the funds have been deposited, will satisfy itself of the fulfillment of this provision, under its own responsibility and in case of doubt, it may, before deliverig such funds, demand the explicit consent of the General Representative or Committee of bond-holders.

Article twelfth. Whenever the obligations have been issued under special contracts, they will comply

with the requisites referred to in Sections I, II, III, V, VI, VII, VIII and IX of Article IV, and the regulation referred to in Section IV of Article VII, must be prepared and set forth in a public instrument before the obligations are issued.

When the obligations are to be issued in favor of a Company, both the aforesaid regulations as well as the appointments that are to be made, will be valid and binding on all the share-holders, always provided that they are approved by the majority of these, unless otherwise provided in the by-laws of said Company.

Article Thirteenth. The wording of the bonds will succinctly set forth the data that are required for the notices referred to in Sections I, V and VII of Article 4, as well as the date and place in which the contract is executed authorizing the issue, the date and place of registry of such contract or the minutes of the first general Meeting of share-holders. The bonds will be signed by the legal representative of the debtor Company and countersigned by the representative of the bond-holders.

Article Fourteenth. Every contract authorizing the issue of obligations and the minutes of the first general meeting of the holders thereof, if the issue is made by public subscription, will be inscribed in the Commercial Registry of the place in which the debtor Company has its domicile.

Article Fifteenth. Articles 173, 203, 204, 205, 210 and 211 of the Commercial Code of the 15th. of September 1889 will apply to the general meeting of the bond holders, as far as they are not contrary to this law and to the regulations that must be issued in accordance with Section IV, Article 7.

Article Sixteenth. In the event of the bankruptcy of a Company that has issued obligations of the class provided for in Article 3, they shall only appear amongst the liabilities for the amounts due and unpaid, and for the sum that they may amount to, after deducting from their present value the installments not yet due. This deduction will be made at the nominal rate of interest stipulated with respect to such obligations.

Article Seventeenth. In the event of the bankruptcy of the debtor company, the bond-holders cannot be compelled to pay in installments on the obligations that may be due on the date of bankruptcy.

Article Eighteenth. The obligations that may be issued abroad by the companies which have been established in this Republic, will take no legal effect therein unless the issue is made in accordance with the provisions of this law.

PROVISIONAL ARTICLE.

The holders of bonds already issued, or whose issue may have been contracted for in the Republic before the date of the present law, will enjoy the benefits thereof as far as it is not contrary to the legally executed agreements with the debtor Companies, and always provided that they previously appoint their general representative or committee.

M. Peniche, President of Congress.—*A. Falcón*, President of the Senate.—*Daniel García*, Secretary of Congress.—*A. Castañares*, Secretary of the Senate.

And therefore, I order that it be printed, published, circulated and duly complied with.

Given in the National Palace of Mexico, on the 29th. of November 1897.—*Porfirio Díaz*.

LAW AND REGULATIONS OF TAXES ON PRECIOUS METALS

DEPARTMENT OF THE TREASURY AND PUBLIC CREDIT.

FOURTH SECTION.

The President of the Republic has been pleased to address to me the following decree:

PORFIRIO DIAZ, Constitutional President of the United Mexican States, to the Inhabitants thereof, know ye:

That in the exercise of the authority granted to the Executive under Art. 2 of the Revenue Law dated the 30th of May 1896, I have seen fit to decree as follows:

Art. 1. In accordance with the provisions of this law, gold and silver will be liable to the payment of the taxes and duties hereinafter expressed:

I. The Internal Revenue tax, at the rate of 3 per cent. on the value of the metals.

II. A coinage tax at the rate of 2 per cent. on the value of the metals.

III. Assay dues in accordance with the tariff that may be issued by the Department of the Treasury.

IV. Smelting, refining and parting dues in accordance with the tariff that may be issued by the same Department.

Art. 2. The Stamp and Coinage Taxes will be assessed on the values which the coinage laws of the country assign to the above named metals, which for the present are as follows:

1 kilogram of silver	\$ 40.195
1 kilogram of gold	665.416

Art. 3. In the tariffs that are laid down for the assessment of the dues referred to in paragraphs III and IV of article 1, account will be taken of the cost of the respective operations.

Art. The taxes and dues referred to in Article 1, will not only be applied to the gold and silver in mixed bars, or either one of these metals by itself, but also to the sulphurets of silver, argentiferous copper and lead, ores in their natural condition, concentrated or that have received a partial treatment and, generally speaking, every alloy or substance that may contain silver or gold.

Art. 5. The Stamp and Coinage taxes as well as Assay Dues will be paid in every case, whether the bars are presented for coinage, or whether it is desired to export the bullion or other substances referred to in this law. The smelting dues will only be collected on those pieces which, through their want of homogeneity, require to be smelted for the purposes of assay, valuation and liquidation of taxes; and the refining and parting dues will only be levied on the bars presented for coinage.

The taxes provided for in Article 1 of this law will not be levied on foreign coin; which will only be subject to the payment of the coinage tax when presented for recoinage in a mint, and if necessary, to the payment of the dues stipulated in paragraphs III and IV of that Article.

Art. 6. The payment of the taxes levied will be made in the Mints or in the special Assay Offices, whether the metals are presented for coinage or whether it is desired to ship them abroad, in either case complying with the requisites of the regulations.

The persons who may not prove the payment of the taxes in the above mentioned offices, and who desire to ship silver or gold, or any other substance containing those metals to a foreign country, will be permitted to make the payment in the Custom Houses, under the terms of and complying with, the requisites provided in the same regulations.

Art. 7. The payment shall be made in current coin of the Mexican coinage, but when the tax is in the form of stamps, the collecting offices will adhere and cancel the proper stamps for the amount of the tax, on the respective documents that they may issue to the shipper. These documents will be issued in the form provided by the regulations, and will specify the value of the metals and amount of taxes paid.

Art. 8. Whenever the ores which are to be shipped abroad proceed from some State in which they are taxed under the Law of the 6th of June 1887, the coinage and stamp taxes can be liquidated on the basis of the valuation of the ores which may have been made in the Assay or Revenue office of the State, always provided that it is so authorized by the Treasury Department.

Art. 9. The Coinage Tax will not be levied on the silver that is directly exported by the Metallurgical Establishments which enjoy that exemption under an explicit condition of their respective contracts that may be in force on the date of this law, and always provided that the proportion of silver in the argentiferous leads does not exceed seven thousandths, and in the argentiferous copper, twenty thousandths; but should the proportion of silver exceed the above limits, the Companies will pay coinage tax on the excess. This exemption will only apply to the products of the establishments which are allowed that privilege, but not to those which they may procure from other companies.

Art. 10. The Coinage and Stamp taxes that are levied on gold under this law, will be assessed on the full value of the metal contained in the substances which may be exported, without any further exceptions than those set forth in the following two articles.

Art. 11. The ores which contain less than 250 grams of silver or less than 10 grams of gold per ton will be exempted from the payment of the taxes and dues provided in this law, always taking into account the proportion between the two limits for those cases in which the metals are alloyed.

Art. 12. The gold or silver ores which may be exported in their natural condition or mechanically concentrated will pay the coinage and stamp taxes on the value of the gold and silver which they contain, with a deduction of 10 per cent.

Art. 13. Should the Treasury Department consider it desirable it may grant special concessions to those undertakings which habitually export ores in large quantities, always provided that they satisfactorily prove by their books and other documents, the weight and value of the ores which they desire to export, and that for such purpose they accept the unconditional inspection of the Treasury Agents. These concessions may be extended so as to specify a fixed sum to be paid by the exporters by way of compensation for the expenses incurred by the Government in the inspection and assay of said ores; but they shall in no case stipulate an exemption or rebate on the stamps and coinage taxes as provided by this law.

Art. 14. The regulations shall stipulate the penalties which are to be imposed on all persons infringing the present law and the manner of enforcing the same, considering the clandestine exportation of the precious metals as smuggling, and punishing it with the penalties in that case made and provided by the General Ordinances of the Maritime and Frontier Custom Houses, and other laws on the subject.

Art. 15. The persons who may produce silver with a proportion of gold, will be freely permitted to separate these metals in private establishments; and in the event of their introducing the mixed metals into any Federal Government office, they will have a right to require the separation of the gold to the limit that they may specify, paying the respective dues per kilogram, in accordance with the tariff. Should the interested parties not fix a limit, the parting will be carried out at their expense, whenever the proportion of gold is two thousandths or more.

Art. 16. The rate specified in the tariff of the general stamp law, for the «Account Sales» issued by the Mints and for the «Gold and Silver Ores» are hereby suppressed. All the previous laws and rulings relating to Federal Taxes on gold and silver, are also hereby repealed,

The States will be allowed to continue collecting the local taxes which are authorized by the Law of the 6th. of June 1887, and on which the Federal contribution will be charged in accordance with the provisions of the Stamp Law.

TRANSITORY ARTICLE.

This law will come into force on the first day of July next.

And therefore, I order that it be printed, published, circulated and duly complied with.

Given in the Palace of the Federal Executive in Mexico, on the 27th. of March 1897.—*Porfirio Díaz*.

—To Lic. José Ives Limantour, Secretary of the Treasury and of Public Credit.

And I communicate same to you for your information and other purposes.—Mexico, March 27th, 1897.—*J. I. Limantour*.

DEPARTMENT OF THE TREASURY AND PUBLIC CREDIT.

MEXICO.—FOURTH SECTION.

The President of the Republic has been pleased to approve the following

Regulations for the collection of the coinage, refining
assay and parting dues on precious metals and the substances that contain them.

CHAPTER I.

PAYMENT OF STAMP TAX AND COLLECTING OFFICES.

Art. 1. The taxes and dues on gold and silver which are referred to in a decree of this date, will be computed and paid in the Mints and Federal Assay Offices. Under special concession obtained for that purpose from the Treasury Department, the Metallurgical Companies will be allowed to present the products intended for exportation in their own offices, in order that the employees of the respective Federal Office may make the assay and computation of the taxes to which they are liable.

Art. 2. The enterprises which are exempt from the payment of coinage dues on the lead and copper, in which the proportion of silver does not exceed 7 and 20 thousandths respectively, and which utilize the products of other similar establishments, will pay 2 per cent. by way of coinage dues on the full value of the silver contained in such products, before disposing of them in their subsequent operations; on the understanding that they will have to pay the taxes in accordance with the provisions of the law thereto relating and these Regulations whenever they present such products for exportation.

These Companies will prove the origin of their products to the Custom Houses or Assay Offices in the manner and under the terms provided in the provisions thereto relating.

Art. 3. The stamps referred to in Article 7 of the Law for the payment of the stamp tax, shall be of a special type, with a value of \$100, \$10, \$1 and \$0.10 respectively, and they shall be issued year by year.

Art. 4. The offices that are charged with collection of these taxes, shall be in due time provided with a sufficient supply of stamps through the proper Stamp Office, and will be subject to the instructions of the General Administrator thereof, in everything relating to the movement of said stamps and the accounts to be taxed. The Treasury Department will determine the remuneration to be allowed to each of such offices for the sale of the stamps and to the Head Offices which supply them, always provided that in no case shall the total remuneration exceed two per cent. on the amount sold.

Art. 5. The Mints and Federal Assay offices will be inspected on the 1st. and 15th. day of each month by the Sub-Treasurer and should there not be any in the place, by the Administrator or agent, who will take a balance of the cash and stamps on hand, as well as revise the accounts of the receipts and disbursements, comparing vouchers. On the 1st. day of each month, the Accountant of the General Treasury, together with the Chief Accountant of the Treasury Department, will make an inspection in the Mint of Mexico City.

CHAPTER II.

OF THE METALS WHICH ARE PRESENTED IN THE MINTS AND FEDERAL ASSAY OFFICES.

Art. 6. Whenever any precious metals or substances containing the same are presented in any Mint or Federal Assay Office, a provisional receipt will be issued to the interested party, should he so desire, which will show, in the case of their being in bars, the number and weight thereof as well as their being intended for export or coinage; and if they come in the form of ores or artificial substances, the number and weight of the packages. The receipt will be taken from a stub book, and the interested parties will sign the stub.

Art. 7. Whenever any bars are presented for coinage, the interested party will set forth on the stub, or on some other document, whether he desires or not that the gold should be separated, and in case he does so desire, up to what limit the separation is to be done; on the understanding that, should he omit this declaration, the gold will only be separated for account of the owner when the proportion of that metal reaches two thousandths or more.

Art. 8. The bars which are presented must be well melted and be sufficiently homogenous, because if they do not fulfill these conditions, they will be re-smelted at the expense of the interested party, provided the office in which they are presented contains the proper furnaces; otherwise they will be returned in order that they may be presented as provided at the commencement of this article.

Art. 9. No bar will be admitted for coinage which assays less than nine hundred thousandths. Should they assay as above, but the gold and silver be alloyed with certain metals in a proportion that will not allow of direct coinage, such bars will be refined, and the owner will be charged the respective refining dues.

The bars which are intended for exportation will be assayed and the taxes computed, whatever may be the alloyed metals and the assays of gold or silver.

Art. 10. The assay samples will be taken out before the interested party should he so desire it, in accordance with the following provisions:

I. BARS OF SILVER, GOLD OR OF BOTH METALS, that assay less than 100 thousandths.

From each bar that weighs at the utmost 35 kilograms, a sample will be taken, and should the weight be greater, a sample will be taken for every 10 kilograms of excess or fraction thereof.

II. BARS OR SLABS OF LEAD, COPPER OR ANY OTHER METAL, whose assay of fine metal does not reach 100 thousands:

Lots will be formed of one to twenty tons according to the more or less homogenous appearance of the shipment, and the Assayer will select a number of bars, which must never be less than the fifth part of those forming a lot, in order that after taking a sample from each bar, he smelt all those taken, and assay the mixed sample so obtained in order that it may serve as a basis for the computation of the taxes on the lot it belongs to.

III. SULPHURETS, MATTES, NATURAL ORES AND METALLURGICAL RESIDUES. Before taking a sample of these substances for the purposes of assay, they will be made up in homogenous lots of the following weights:

1st. Artificial sulphurets and other products of the same character.	1 ton.
2nd. Mechanically concentrated	2 „
3rd. Copper Matte.	4 „
4th. Natural Ores, picked or crushed	7 „
5th. Metallurgical residues	10 „

In taking samples from each lot, the half of the packages or bags which form the lot of the first class; the third part of those which compose the second class; the fourth part of the third class; the seventh part of the fourth class; and the tenth part of the fifth class will be emptied out. The contents that are so emptied will be perfectly mixed up and a heap will be formed and afterwards divided into two equal parts;

one of these halves will be again mixed and divided into two equal parts, this process being continued until the heap is reduced to 10 kilograms. This heap will be crushed into small grains, and the division will be continued until a sample is obtained with a weight of one kilogram more or less, from which after duly powdering and sifting it a sample will be taken for assay.

In the formation of the lots that are to be assayed and valued separately, a difference will be allowed of 25 per cent. more or less in the weight of each lot; but for the purposes of computing the tax, the exact weight of each lot must be taken. When the Mattes, natural ores or Metallurgical residues are transported in bulk, either in wagons or box cars, the contents of each car will form one lot and the assay will be made by mixing the samples that are taken from as many different points as there are tons in the lot. Should the car carry different classes of ores or other substances duly separated, an assay will be taken of each class, taking as many samples as there are tons of each class, and endeavoring to make the mixtures approach as near as possible to a fair average.

IV. METAL GOODS which are assayed at the request of their owners in order to certify to their value.

They will be assayed by taking the quantity of metal that may be necessary from different parts of the article, if it is in one piece; or by taking quantities in proportion to the size of the pieces if there are several. In assaying plated goods, the superficial plating must be thrown out, which is generally white and is of a higher assay, and the assay must be taken to hundredths.

Art. 11. The weight of the silver, gold or mixed bars will be taken down to the grams, and that of the other substances, down to kilograms. In both cases the number which will be taken shall be the next lower one, should there be any fraction of grams, or of kilograms, as the case may be.

Art. 12. In the assay of bars with a minimum assay of one hundred thousandths, the proportion of silver will be taken to two thousandths and that will go to the ten thousandths. In those metals which assay less than one hundred thousandths, it will be taken up to the ten thousandths for silver and hundred thousandths for gold. In other substances, to hundred thousandths for silver and to the millionths for gold.

In every case, the next lowest number will be taken, should there be any fraction below the limits above indicated.

Art. 13. The assay of all the pieces or substances which may contain precious metals, will always be made by the dry method, and if possible, separately, by two employes; or if this cannot be done, by one person who will make duplicate assays.

Art. 14. After comparing the results of the assays, the average of the two will be taken as the final decision, always provided that the differences do not exceed:

Three thousandths in silver in pieces.

Five ten thousandths in gold pieces.

Two ten thousandths in silver contained in other substances.

One ten thousandths in gold contained in other substances.

Should the differences exceed the above, the assay will be repeated or fresh samples will be taken, or the piece will even be resmelted at the expense of the interested party, if it is possible to do so. Otherwise, the average of the results obtained will be accepted as final.

Art. 15. The assay will be made at latest on the day following the presentation of the pieces, unless it is a holiday. In computing the contents of the pieces, the taxes to which they are liable will also be computed, and their amount will be deducted from the value of the precious metals contained in such pieces.

When the latter do not contain silver in sufficient quantity to cover the amount of the taxes, or when the pieces or substances are intended for exportation, the taxes will be paid in current coin of the Mexican coinage.

Art. 16. The liquidation will be made on the corresponding statement when dealing with pieces intended for coinage, or on the certificate of payment, if dealing with metal for exportation. These documents will be extracted from books with double stubs, which will show the respective liquidation and the receipt signed by the interested party in the first case, and his acceptance of the payment in the second.

Art. 17. The Mints or Assay offices will report to the interested parties on the third day after their presentation, the values and weights of the pieces or substances which they may have presented, as well as the respective liquidations, in accordance with the provisions of the preceeding Article.

Art. 18. Should the interested party not accept the liquidation through differences in the assay or in the weight, he will have a right to request that these operations be repeated, or should he so prefer it, he may withdraw his property, paying the dues for the first assays. The second assay will be made in the same office, and in presence of its chief, by the person whom the interested party may designate and with a fresh sample taken in the presence of the owner. Only when the second assay differs from the first less than the allowance specified in Article 14, will the corresponding dues be collected; but should the difference be greater, only the dues for the first assay will be collected. If, after the lapse of four working days from the date of presentation, the interested party should not present himself, he will be understood as accepting the liquidation with all the data on which it is based as set forth in the account presented, and he will therefore forfeit all right to make any further claim, whether with respect to the weight or to the assay of his bullion. Should the pieces assayed be intended for coinage, the Mint will dispose of them for this purpose.

Art. 20. Should the interested party accept the liquidation of the pieces intended for coinage he will give his receipt and in exchange therefor will receive an order for the net value of the silver, and another for the value of the gold, when the pieces contain it and he pay the parting dues.

The orders will be issued against the Government office, bank or commercial house which may be previously designated by the Treasury Department, and at the days' sight that the latter may specify, and the offices that draw such orders will duly notify those against whom they draw on the same day on which they issue the drafts.

Art. 21. Should the pieces or substances be intended for exportation, a document will be issued to the interested party to prove the payment of the taxes, with all the data required for the identification of the substances, the name of the Custom House through which the exportation is to be made and the term allowed for making it.

Art. 22. The office which may issue the vouchers to the exporters, will notify the proper Custom House, at latest on the following day.

Art. 23. If, through any unforeseen circumstance, the interested party desires to make the exportation through a Custom House other than that designated in his voucher and within the term therein specified, the office which may have issued it will endorse the alteration on the document itself and notify the respective Custom Houses; the one, that the exportation is not to be made through it, and the other that it is to be made in accordance with the preceeding Article.

Art. 24. The Custom House will take up from the Exporters, the documents that prove the payment of the taxes in the Mints and Assay offices, and will issue certified copies thereof to the interested parties, should they so request.

Art. 25. The stamps for the payment of the tax will be supplied by the collecting offices at the expense of the interested party, affixing the matrixes on the document that is to be issued to him and the stubs of the stamps on the principal stub which is to serve the office as a record of the money received.

Art. 26. The Supply of the stamps which are affixed on the statements and exportation documents, will be proved by the Mints and Assay offices, by the records and under the requisite specified in the instructions in force on the subject, as well as those that may hereafter be issued.

Art. 27. The exportation must be carried out within the term fixed in the document which proves the payment of the taxes levied, and which shall not exceed thirty days, under penalty of the cancellation of the document and the making of a fresh liquidation and collection by the Custom House through which the exportation is made, as if the bars or substances had not been presented in a Mint or Assay office.

Art. 28. The bars which are intended for coinage in the Mint to which they are presented, shall be marked with consecutive numbers and their weight. If these bars are remitted from some Assay office or Mint to another Mint, these marks will be punched on the bars and they will also be marked in the same manner with the assays of silver and gold and the name of the office that ships them.

Art. 29. The bars that exceed one hundred thousandths in assay and that may be shipped abroad, will carry the above marks.

The bars which assay less than one hundred thousandths, will be marked with the National Coat of Arms punched on them, and the name of the office which issues the voucher proving the payment of the taxes. In the case of ores and artificial substances, the marks will be substituted by wires, countersigns or lead seals which will be placed on the packages or car, whenever they are transported in bulk or in car load lots.

Art. 30. The collector of Customs in the Port of shipment, will take special care that the bars or substances which are presented are properly inspected, in order to make certain that they are those covered by the voucher. If through any information given, or suspicion, the collector should doubt that the substance covered by the document is not the same that has been assayed by the office which issued it, he may order that the weights and sample be taken afresh, and will forward them to the Director General of Mint, in order that the assays may be repeated, and meanwhile, he will permit the exportation to be made after securing the payment of the taxes, duties and fines that may be levied. Should the report of the Director show that the difference exceeds the allowance specified in Article 14, the case will be submitted to the Treasury Department for decision.

Art. 31. The remains of the samples which may have served for the assays, will be duly classified and preserved in order to make the rectifications that may be required, or if these are not necessary, in order to return them to the interested parties when solicited.

If within the six months following the presentation of the bars or substances, the return of the samples has not been requested, they will be considered as given up to the Treasury, and their value will be duly entered in the receipts in accordance with the instructions that may be issued by the Director General of Mints.

The same thing will be done with the chips and slags produced in the smelting that is made at the expense of the interested parties.

CHAPTER III.

OF THE METALS, ORES AND OTHER SUBSTANCES THAT MAY BE PRESENTED IN THE MARITIME AND FRONTIER CUSTOM HOUSES.

Art. 32. The bars, bullion, slabs and sulphurets that contain gold or silver, and that being intended for exportation through some Maritime Custom House, are not previously presented in any Mint or Assay office, but are directly shipped from the place of their origin to the Custom House of shipment, will be allowed to be transported without any document or other requisite throughout the whole territory of the Republic, except within a zone of twenty kilometres width along the coast. These same products as well as ores in a natural or concentrated state, mattes, smelter residues and any other substance which may contain silver or gold and which may be shipped under the same conditions to the frontier Custom Houses, may be freely transported up to the limit of a zone of 20 kilometres along the frontier.

Art. 33. In order to transport precious metals, ores and other substances through the zones referred to in the preceeding article, it is necessary that they should be accompanied by an invoice issued by the Sub-Treasurer, or if there should not be any in the place of shipment, by the Administrator or Agent of the Stamp Office, the Chief of the Federal Telegraph Office or the Post Master.

These employees will issue the invoices that may be requested of them, even should the metals which it is desired to ship not proceed from their place of residence, merely taking care to state the place of their production.

If in the place of production, or in that which is nearest to the boundary of the 20 kilometre zone and where it is desired to obtain the invoice, there should be no federal employee to issue it, it may be done by the highest political authority present, complying with the requisites which these regulations specify regarding such documents.

Art. 34. The invoices referred to in the preceeding article will be issued after bond is given to guarantee the payment of the taxes and fines, and which bond will remain in force as long as it is not proved that the bars or substances covered by those documents, have been exported, shipped into the territory of the Republic, or sold within the zone. In the last case, the purchaser will give a fresh bond in substitution of the one which is to be cancelled. The above mentioned invoices will contain all the data necessary for the identification of the bars or substances which they may cover, and both the invoices as well as the bonds will record the value of the precious metals.

Art. 35. Whenever considered necessary, the Treasury Department will have power to fix a minimum limit of value per ton on which to base the amount of the bond, according to the circumstances and locality.

Art. 36. In specific cases and whenever the proper guarantees can be obtained, the Treasury Department may issue special regulations for the transportation of metals and ores within the zones referred to in these regulations.

Art. 37. The metals, ores and other substances which are not previously assayed, must be exported within the period specified in the respective invoices, which shall not exceed 60 days; but if it is about to expire when the metals, ores and substances are about to enter into the Maritime or Frontier zone, the interested parties will be allowed verbally to solicit the revalidation of the invoices. This revalidation will be made by the employees referred to in Article 33, at the point that may be selected by the interested parties, and for a term not exceeding fifteen days. The extension of time will be noted on the aforesaid document.

Art. 38. The invoices issued by the employees who are authorized for that purpose, will cover the metals and other substances in transit through the zone, in the same manner as the documents which are issued by the Mints and Assay Offices. The shippers of said products and the persons or firms to which they are consigned, will be obliged to present those documents to the fiscal employees who may require it, as often as demanded.

Art. 39. The Maritime and Frontier Custom Houses, which may dispatch precious metals covered by the invoices referred to in the preceding Articles, as well as the Mints or Assay Offices which may receive products under these conditions, and for coinage in place of exportation, will take care to notify the office which has issued the invoice, in order that the corresponding bonds may be cancelled.

Art. 40. Whenever it is desired to export ores containing copper, antimony, iron, zinc or others that generally contain silver or gold, and the interested parties declare that they do not contain any such, the Maritime and Frontier Custom Houses will act in accordance with the provisions of the General Ordinances; but will ascertain by assay, that those ores really do not contain precious metals. In case they do contain them, the corresponding taxes and penalties will be applied, for which purpose the Custom Houses will require the respective bond to be given before allowing the shipment to be made.

Art. 41. In the cases in which the pieces or substances covered by the corresponding invoices, are exported, the Collector of Custom will order samples to be taken for assay, in the proportions prescribed by these regulations; and if the appearance of the substances should give rise to a suspicion that they are not homogenous, more samples may be taken, besides which, the provisions of Art. 15 will be observed.

Art. 42. Every sample will be divided into three equal parts; of which one will be delivered to the interested party, another to the Assay Office and another will be forwarded to the Director General of Mints for the rectification of the assays. The employees of the Assay Offices, will be personally responsible to the Treasury for the differences against the Treasury that may result in the computation of the duties, through

the rectification of the assays. The Director General of Mints will decide the cases and the form in which the rectifications are to be made.

Art. 43. On complying with the provisions of the two preceeding articles, a minute will be made out in triplicate in which will be recorded the weight, number of samples taken and other data necessary for making the respective computation. This minute will be signed by the Collector of the Customs, the Inspector and the shipper or his duly authorized agent. One copy will be forwarded by registered mail to the Assay Office with the third part of the samples duly packed and sealed, noting on each package the data that guarantee its authenticity; the second copy, with another third part of the samples will be forwarded under the same conditions to the Director General of Mints, and the triplicate will be preserved in the Custom House.

Art. 44. While the Custom House is waiting for the Assay report, it will allow the exportation, under a bond to the satisfaction of the Collector, which will guarantee the payment of the taxes and fines that may be levied on the shipper.

The bond may be substituted by a cash deposit, if so requested, by the interested party; always provided that he and the Collector of Customs agree on the amount that is to be deposited to cover the taxes and fines that might be levied.

Once the liquidation is made, any excess in the deposit will be returned to the shipper, without any necessity of a special order from the Treasury Department.

Art. 45. Once the assays are made in the respective office, it will forward to the Custom House the computation of the taxes to be levied, with a statement of the number of assays made, the proportion of gold and silver in each sample, and the weight and value of these metals contained in the different lots and in the whole shipment.

Art. 46. The Collector of Custom will inform the interested parties of the liquidation made by the assays office and should this be accepted, it will notify the Director General of Mints, in order that he may report the results of the rectification assay which will serve as a basis for the final liquidation.

Art. 47. The liquidation having been checked by the Custom House, it will proceed to collect the duties and taxes, and will issue the respective voucher to the interested party. The proper stamps, to cover the stamp tax, will be affixed and cancelled on the document, in such a manner that the matrixes will be adhered to the receipt issued to the interested party, and the stubs will remain on that part which is to serve the Custom House as a record of the payment. Once the taxes and duties are paid, the bond which guarantees them will be cancelled.

CHAPTER IV.

PENALTIES.

Art. 48. The employees who may neglect to give timely notice as required under Arts. 22 and 39, will be punished by a fine of \$5 to \$50 in each case.

Art. 49. The general provisions of the Stamp Law will apply to all infringements thereof, in all matters not specially provided for in the regulations.

Art. 50. The introduction of metals or ores in the 20 kilometre zone referred to in the regulations, without the corresponding invoice or proof of payment, and their illegal transportation within the same zones, will be held to constitute an act of smuggling, and will be punished with the penalties designated for that offence in the General Maritime and Frontier Custom House Ordinances.

Art. 51. The penalty of double duties will be imposed in the following cases:

I. If the metals or ores which are found within the zone without the corresponding proof of payment, have paid their taxes in some Mint or assay office and have their seals and countersigns in good order. In this case, the said products will be weighed and samples taken as if they had not been assayed, and the amount of the duties paid will be taken into account in imposing the fine.

II. Should the metals or ores not have paid the corresponding taxes and be travelling without an invoice, and have reached the Custom House of shipment without having been apprehended within the 20 kilometre zone, but have been presented by the interested party of his own accord.

III. If the metals or ores have been apprehended within the zones, under the protection of a time expired document or invoice.

Art. 52. The breakage of the seals will in every case be punished by the imposition of a fine of \$10 to \$200 on the carrier, according to the circumstances: without prejudice to a scrupulous inspection of the packages by the Custom House, and should any suspicion arise that such packages have been substituted for others, fresh samples will be taken. Should the change of packages be proved, the owner thereof will suffer the penalty provided in Art. 543 of the Custom Ordinances for cases of this character, and the carrier will be liable to a fine of three times the amount of the duty levied on the packages which are substituted in place of the original ones.

Art. 53. The persons or firms which may not present the documents to the fiscal employee, whenever required in Art. 38, will render themselves liable to a fine of \$5 to \$100.

Art. 54. The fines, which will be administratively levied will be subject to the approval of the Treasury Department which can remit them wholly or in part.

TRANSITORY.

These regulations will come into force from the 1st day of July next.

Mexico, March 27th, 1897.—*Limantour*.

TARIFF

For the Collection of Assay, Smelting, Refining and Parting dues.

ASSAY.

SILVER, GOLD AND MIXED BARS, assaying at least 100 thousandths:

For each bar weighing up to 35 kilograms \$ 2.50

For every 10 kilograms or fraction thereof in excess. 2.50

LEAD, COPPER OR OTHER BARS, IN WHICH THE PRECIOUS METAL DOES NOT REACH 100 THOUSANDTHS.

For every five tons or fraction thereof in the shipment. \$ 2.50

ARTIFICIAL SULPHURETS, CONCENTRATES, MATTE, ORES AND RESIDUES:

For each lot or fraction thereof, according to its class \$ 5.00

ARTICLES OF WORKED METAL:

For each assay, including the marking \$ 1.00

MELTING.

Per kilogram or fraction thereof before smelting. \$ 0.10

In no case will, the charge be less than one dollar.

REFINING.

For every kilogram or fraction thereof in the piece presented \$ 1.50

PARTING.

When the proportion of gold does not exceed 200 thousandths; per kilogram . . . \$ 1.25

When the proportion of gold exceeds 200 and not 400; per kilogram. 2.00

When the proportion of gold exceeds 400 and not 600; „ 2.50

When the proportion of gold exceeds 600; „ 3.00

In no case will the charge be less than. 0.50

Mexico, March 27th, 1897.—*Limantour*.

DEPARTMENT OF THE TREASURY.

MEXICO.—SECTION FOURTH.

The President of the Republic has been pleased to address to me the following Decree:

PORFIRIO DIAZ, Constitutional President of the United Mexican States, to the inhabitants thereof, know ye:

That the Congress of the Union has seen fit to decree as follows:

The Congress of the United Mexican States Decree:

Art. 1. From and after the 1st. of July of the present year, stamps of the class required by law will be affixed and cancelled, at the rate of two dollars and fifty cents for each claim, on the Titles to Mines which do not contain gold, silver or platinum and which are subject to the payment of the Federal tax on mining properties; and from and after the same date, the same mine shall only be liable to an annual tax of two dollars and fifty cents for each claim.

Art. 2. The mines referred to in the preceeding Article, will be liable to the payment of the same taxes as the gold and platinum mines, when the ores therein produced contain gold, silver or platinum in any proportion.

Should the proportion of these precious metals not exceed in any part of the lode or vein, the limit specified in Article II of the law of the 27th of March 1897, the Executive may reduce the annual tax to \$5.00 per hectare on the claims of a single Company, when they exceed 20 in number, without reaching 100; and to two dollars and fifty cents per hectare, when the claims exceed one hundred in number.

Art. 3. Any inexactitude in the data with regard to the payment of the tax, which may be furnished by the Miner, as well as the want of timely notice that the ore extracted from the mines contain gold, silver or platinum, will render him liable to a fine equal to three times as much as the tax that ought to have been paid from the date on which the incorrect information was furnished or notice not given, and the fine shall in no case be computed for a term of less than one year.

Art. 4. From and after the 1st. of July of the present year, Art. 5th. of the law of the 31st, of October 1892, is repealed; but during the fiscal year of 1898—1899, the iron and quicksilver mines which are now in operation or whose titles may have been issued before this law comes into force, will continue paying the tax specified in Article 5th of the above mentioned Law. Once that the fiscal year has expired, the iron and quicksilver mines will be liable for the payment of the taxes specified in the preceeding articles.

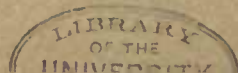
S. Camacho, President of Congress.—*R. Dondé*, President of the Senate.—*Daniel García*, Secretary of Congress.—*A. Castañares*, Secretary of the Senate.»

And therefore, I order that it be printed, published, circulated and duly complied with.

Given in the Palace of the Federal Executive in Mexico, on the 3rd. of June 1898.—*Porfirio Díaz*.

—To the Secretary of State and of the Department of the Treasury and Public Credit, *Lic. José I. Limantour*.

And I communicate the same to you for your information.—Mexico, 3rd. June 1898.—*Limantour*.



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